3.4   Supply Chain Management

This section includes a discussion of the proposed re-engineered and re-solutioned Supply Chain Management processes. Its purpose is to illustrate and fully explain the desired process environment or architecture that is appropriate for the Commonwealth.

The Supply Chain Management process area, as defined in the Commonwealth's Enterprise Business Architecture (EBA), consists of the following business processes:

- Goods and Service Acquisition (Procurement)
- Inventory Control

In considering an approach to re-engineering the Supply Chain Management process area, it is interesting to note that the Commonwealth's only true enterprise application that is currently deployed, the eVA e-procurement system, supports Supply Chain processes. This suggests that much of the fundamental work of re-engineering in Supply Chain has already been completed, and that a process model based on best practices is already in place. In fact, much of the information that we gathered during due diligence supports this view. We believe, however, that significant additional re-engineering opportunities exist in procurement, and we will offer suggestions for exploiting the capabilities of eVA more fully, specifically in terms of integration with downstream processes in inventory management and accounting.

The Commonwealth Partners believe that the desired process environment for Supply Chain Management in the Commonwealth can be achieved with the implementation of just one additional inventory application along with additional training, process standardizations and enhancements in connection with the eVA procurement system. Table 3-87 lists the enterprise supply chain processes that were analyzed during the due diligence phase of the Enterprise Applications PPEA, the corresponding type of application we propose to implement, and how it will facilitate the desired process environment.

Table 3-87: Supply Chain Management Proposed Implementation and Effect

Supply Chain Management Process	Enterprise Application	Effect on Process Environment
Goods and Services Acquisition	eVA – Enhancements to strengthen its effectiveness	Enhancements to eVA will be driven from policy and process re-engineering to strengthen and simplify process flows.
Inventory Management	Warehouse Management System	Implemented as a common warehouse management system across the Commonwealth. Providing common integration with other key Commonwealth applications such as PeopleSoft and eVA.

Target Environment

The target process environment can be described by its effect on three factors; process, technology, and people. Our proposed solution for the Supply Chain Management processes will bring about changes in all three areas.

Process

The catalyst for change is the desire to continuously improve Supply Chain Management processes. The Commonwealth's Supply Chain Management processes fully support the operation of the Commonwealth today. However, to meet the Council on Virginia's Future strategic objective # 4 of being "…recognized as the best managed state in the nation…" year after year requires continuous process improvement. Continuous process improvement has been proven to result in the following:

- Improved customer service
- Reduced cycle times
- Fewer errors through a focus on quality
- Reduced resources devoted to carrying out productive processes
- Better information to support management decision-making
- Reduced risk

Our proposed solution envisions a process environment in which redundant data entry is eliminated, manual steps in a process are automated, and approvals are on-line. The To-Be Supply Chain Management processes are characterized by the following:

- **Decentralized, One-Time Data Entry** – Data is entered into the system one time and is captured as close to its source as possible to increase accuracy and reduce paper transactions.
- **Elimination of Manual Steps** – Where possible transactions and approvals will be processed on-line.
- **More Efficient Processing** – Competency Groups will be established for the purpose of continually improving Commonwealth policies and processes. One source for process improvements will be performance data captured from KPIs and scorecards.
- **Reduced Risk** – React swiftly to business problems as a result of visibility provided by KPIs and improved reporting capabilities.

The desired process environment is based on looking at current processes and recognizing how technology can improve them. Some process improvements require changes in policies, regulations, or supply chain procedures, and can be effective without the introduction of new technology. The Commonwealth Partners' solution leverages our specialized knowledge of technology, Supply Chain Management and government and recommends ways in which new systems can further the Commonwealth's drive to improve its Supply Chain Management processes continuously. We are aware of many "best practices" for improving processes, but we also recognize that sustaining process improvements and ingraining them into the culture of an organization requires a focus on technology and people.

Technology

We believe the appropriate target architecture for the Commonwealth is one in which agencies focus on their business and technology specialists focus on the hardware and software that

supports the business. In the same way that an agency must have an office to conduct its business but relies on professionals to manage the property, agencies requiring the support of an automated Supply Chain Management system should not worry about hardware, data bases, back-ups, upgrades, and overall maintenance of that system. If each agency constructed, maintained, and managed its own property, the Commonwealth could easily end up with 100 separate office buildings scattered throughout the capital. Such an arrangement is far less efficient than having fewer structures in which agencies with similar needs share space, maintenance, and property management. All agencies share certain automated Supply Chain Management needs, which with sufficient participation, planning, and change management, can be accommodated in one application, on one set of hardware, in one location.

The one additional Warehouse Management application that we propose for the Supply Chain Management process area is as follows:

- Provia ViaWare WMS will act as one component of the Inventory Management system in addition to the applications referenced in the Administrative Management section. Provia ViaWare is a warehouse management system and will optimize the Commonwealth's distribution environment by improving inventory and order accuracy, maximizing space utilization, and increasing labor efficiency through consistent functionality and processes across the Commonwealth. Being that only two warehouse opportunities were identified during the due diligence phase, Provia ViaWare WMS is working in conjunction with Maximo, which also provides Equipment Management capabilities, and Tririga which provides Facility Management capabilities, to provide enterprise-wide inventory capabilities.

In addition, to improve visibility and reporting of overall performance we will support enterprise Scorecards. Provia could support tactical KPIs that will be monitored at the agency level and strategic KPIs that will be visible at the executive level. These performance indicators will be presented in a user-friendly manner across the Executive Branch agencies.

These enterprise applications will help to streamline processes, reduce risk, improve visibility into Supply Chain Management activities, and reduce expenditures (through reducing labor, increasing productive time, improving strategic buying, improved data accuracy and improved information visibility).

At the heart of our solution for Supply Chain Management functionality are enterprise level support systems for procurement and inventory management. Our solution suggests a managed progression toward that goal. First, the Commonwealth Partners will establish a Center of Excellence where Subject Matter Experts from across all agencies participate to integrate industry best practices for use in the Commonwealth. Following will be the implementation of inventory management software that will act at keystones for the Commonwealth. The Commonwealth Partners will work closely with the Commonwealth to determine the correct sequence in which to bring follow-on agencies onto the systems.

The enterprise-wide applications will interface with other enterprise-wide applications such as eVA, HR/Payroll, finance, and executive scorecards, as well as other agency mission-specific applications as required. Judicial and Legislative branch agencies, independent agencies, and

Higher Education agencies will be invited to participate, and we believe many will. However, our proposal focuses on those agencies over which the Governor has control.

People

The vision for re-engineered and re-solutioned Supply Chain Management processes is not complete without a discussion of changes to the human resources that interact with the systems.

Our proposed solution for the Supply Chain Management within the Commonwealth will affect the workforce in the following ways:

- **Allocation of Responsibilities** – Our solutions promote a clear division of labor among Commonwealth employees. The business owners are able to focus on business while the technical support resources focus on the hardware and application.

- **Knowledge** – The Supply Chain Management systems will be friendly to the end-user, while being more sophisticated in features and functionality. The technical support team will include members with specialized expertise in the new technology.

- **Mix of Skills** – By bringing agencies onto one common set of systems, there will be fewer supply chain systems in the Commonwealth that require specialized expertise to support. As more and more agencies come on board with the enterprise-wide system, the number of different applications being supported by technology staff will decrease.

- **Allocation of Human Resources** – Process improvements supported with technology can yield efficiency. The desired process environment will enable the Commonwealth to redirect some resources for better use.

Enterprise Applications PPEA is a critical part of IT Transformation for the Commonwealth and will affect how work is allocated and performed. New policies, procedures, services and relationships will be created. Jobs, skills and performance measurement will be affected. Over time, new system capabilities, services, business process improvements and IT solutions will be implemented, generating more impact on the Commonwealth's human resources.

Rollout of Supply Chain Management Tower Solutions

Table 3-88 shows that the desired process environment and architecture consists of:

**Table 3-88: Supply Chain Solution Rollout**

Project	Estimated Timeframe
Establish the Acquisition Competency Group	Jan. 2006
Establish the Inventory Management Competency Group	Jan. 2006
First Commonwealth implementation of Provia	Jan 2006–May 2007
Migration of additional agencies onto Provia	May 2007–Nov. 2007
Implementation of eVA enhancements	Jul. 2006

The result is streamlined information technology architecture to support fewer integrated systems. Each of these major components is one stone on the pathway to the desired state for the Commonwealth.

The Commonwealth Partners have identified enterprise-wide supply chain scorecards or dashboard reporting as a key benefit. The supply chain scorecards (KPIs) for the executive level are a long-term project and will be implemented and rolled out to agencies in phases beginning in the third year of the project to allow for the accumulation of viable reporting data. The Commonwealth Partners will implement tactical KPIs within the new enterprise application suite as they are being rolled out.

Figures 3-47 summarizes the implementation approach for the enterprise solution for the Supply Chain Management team:

Figure 3-47: Supply Chain Tower Solution Map
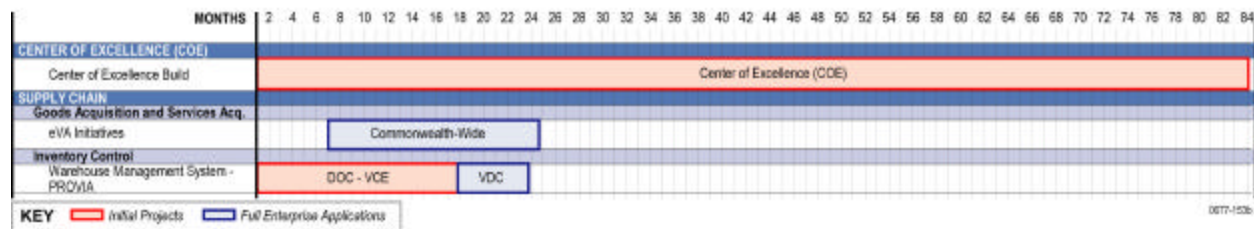
The following discussion of re-engineering and re-solutioning for the Supply Chain Management tower is organized according to its two major processes:

- Goods and Services Acquisition
- Inventory Management

The introduction to this section provides an overview of the features of the re-engineered processes. The features range from how the process works to its impact on Commonwealth government. Some features vary significantly among the processes while others are consistent across all processes. Features that are consistent among the processes are described only once in the introduction section. These include the following: integration points, reporting requirements, security considerations, and data conversion requirements.

Other features of the processes are discussed separately for each process. Features discussed for each process include the following; process flow narrative, process objectives and key performance indicators, organizational impact considerations, impact on existing policies and procedures, other risks, and improvements, strengths and weaknesses.

3.4.1 Procurement (Goods and Services Acquisition)

In remarks at the 14th Annual Public Procurement Forum held January 6, 2002 in Richmond, Virginia, Governor Mark Warner called attention to several opportunities facing the Commonwealth:

> *…The <u>major barrier</u> to achieving a more efficient and cost-effective government is organizational and cultural.*
>
> *…State government does not operate as a single enterprise. Over the years, we have become so decentralized that our agencies and institutions have become largely autonomous enterprises. What was once a reasonable response to problems is now proving to be costly and inefficient.*
>
> *…But the present system permits <u>redundancies and duplications</u>. We spend enormous amounts of money on independent administrative systems, financial management systems, payroll systems, human resource management systems, and information systems.*
>
> *…we simply must adopt a more <u>collaborative, enterprise-wide approach</u> for every basic business practice if we are to provide the kind of government that our people both demand and deserve and if we are to free up valuable resources for education, transportation, public safety, and job creation.*

eVA was heralded in these remarks as an important step in addressing the challenges and opportunities facing the Commonwealth. As indicated in Section 2 of this proposal, we recognize the benefits that eVA provides. It provides consolidation of spend, on-line ordering, a common face to the vendor community, as well as other benefits. At the same time we recognize the perceived eVA shortcomings that agencies reported. Based on the due diligence activities and our assessment of the acquisition environment, we submit that agency dissatisfaction with eVA stems largely from underlying people and process issues. For example, eVA training was highlighted in numerous survey responses as an area of weakness.

The Commonwealth Partners' proposal addresses the weaknesses identified in the current environment. eVA improvements will resolve user complaints and facilitate the removal of roadblocks to acceptance of the system. Procurement re-solutioning is focused less on technology solutions and more on issues like root cause analysis, training, and change management. Given the time and effort expended to roll out eVA, and given the benefits it provides, we feel that the Commonwealth should leverage the solution that is currently available to maximize the return on its investments. Wherever possible, agencies should use eVA directly as their primary/sole procurement application.

The Commonwealth Partners propose conducting an eVA enhancement effort to determine the root cause of user issues. Our assessment will focus on eradicating both duplicate and manual entry conditions. The objective is to reduce the number of redundant procurement systems and double data entry. We propose conducting a continuous improvement initiative to develop

solutions to root causes. Solutions will be piloted in selected agencies. Each solution will be reviewed and validated before rollout to the wider Commonwealth.

In addition to eVA enhancements and increasing user satisfaction, there is opportunity to standardize and improve the Goods and Services Acquisition process across the Commonwealth. The Commonwealth Partners approach for the enhancement of the Commonwealth's acquisition processes is not to radically re-design, but rather to improve and standardize the processes and procedures that currently exist in the Commonwealth. The Commonwealth Partners bring public sector procurement expertise to improve Commonwealth processes in such areas as governance, commodity council structure, and use of disadvantaged/SWAM vendors. We propose conducting a re-engineering effort focused on process improvements and standardization. We will complete a broad review of agency processes to best identify areas for improvement.

We propose to establish an Acquisition Competency Group within the Enterprise Center of Excellence (COE). The Acquisition Competency Group will act as an oversight body for acquisition across the entire Commonwealth and is responsible for:

- Identify, develop, and monitor enterprise level acquisition processes
- Provide governance to address cross-agency issues
- Establish minimum data model requirements
- Establish enterprise-level KPIs
- Assist individual agencies (as necessary) with developing agency-specific procedures directly supporting the mission of the agency
- Provide continuous improvements to acquisition practices

The Commonwealth Partners propose improving the Vendor registration process. We will follow a methodology to define, design, build, test, and rollout vendor registration improvements. The Commonwealth should have a common vendor master file and a standard registration process.

The Commonwealth Partners propose improving SWAM reporting and compliance. Expanding the use of SWAM vendors is a new initiative at the Commonwealth and agencies are struggling to meet the objectives of the initiative. We will follow a methodology to complete this effort, conducting a detailed assessment of the current environment, developing solutions, and rolling out enhancements.

The Commonwealth Partners propose completing a strategic sourcing program review. We understand the Commonwealth's spend management efforts have yielded benefits to date. We will leverage our industry expertise in this area to provide an independent perspective that will validate that the Commonwealth is obtaining maximum benefit from the current program.

Training, communications, and an overall change management approach are key components in our proposal, particularly given our findings that several acquisition weaknesses are due to the human component of the acquisition process. The approach to training and other facets of change management are addressed elsewhere in the larger Methodology section of our overall response.

Process Flow Narrative

No significant process flow changes are anticipated relative to the high level process decomposition provided in the due diligence document and shown in Figure 3-48.

Figure 3-48: Acquisition Decomposition Chart
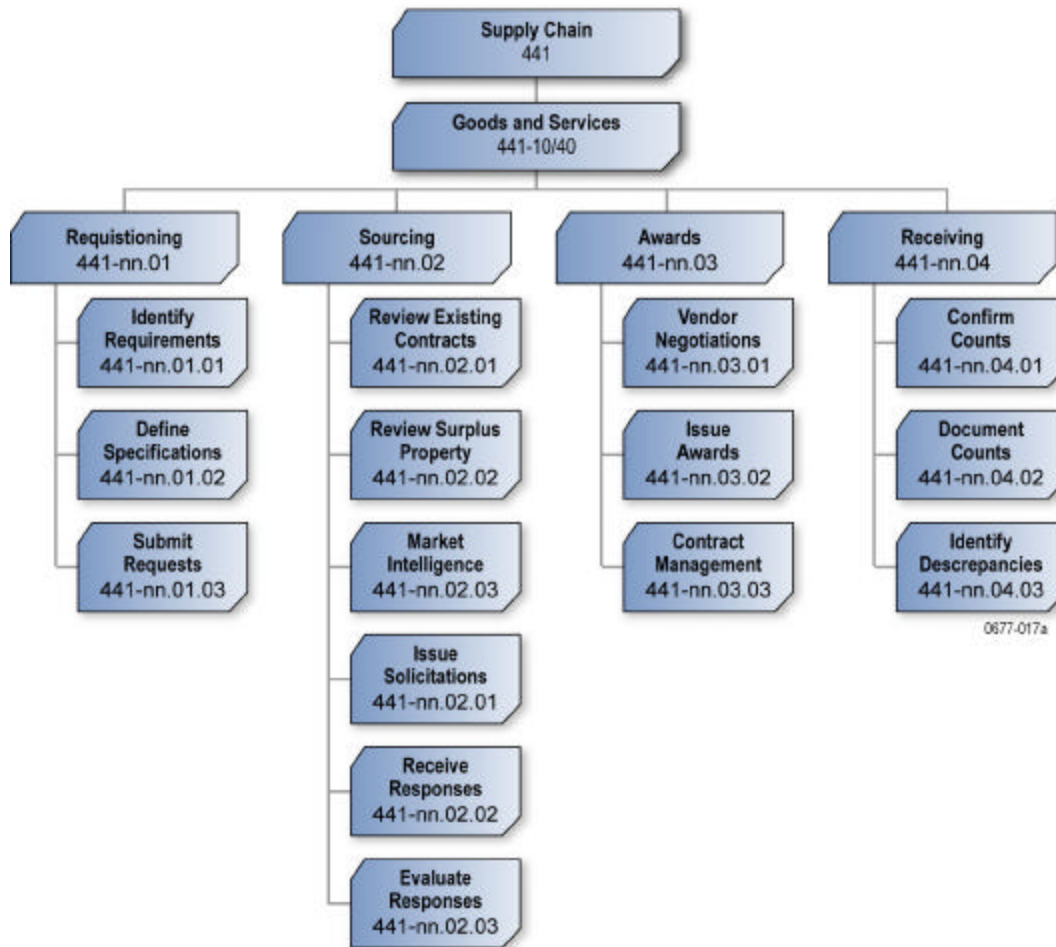
Table 3-89: Process Characteristics for Acquisition

Characteristic	Under Proposed Solution
Requisitioning	**The process of identifying, defining, and submitting requests for goods and services**
Inputs and predecessors	User Requirements
Outputs and successors	Requisition
Process orientation	Decentralized
Process placement	In-sourced
Sourcing	**The process of matching demand requirements with supply vendors**
Inputs and predecessors	Requisition
Outputs and successors	Vendor Proposals Market Intelligence
Process orientation	Decentralized or centralized, depending on dollar amount of good/service requested
Process placement	In-sourced

Characteristic	Under Proposed Solution
Awards	**Process of awarding contracts to vendors, including negotiations and contract management**
Inputs and predecessors	Requisition Vendor Proposals Market Intelligence
Outputs and successors	Contract Catalog Purchase Order
Process orientation	Decentralized or centralized, depending on dollar amount of good/service requested
Process placement	In-sourced
Receiving	**Process of documenting receipt of goods**
Inputs and predecessors	Purchase Order Notification of incoming delivery
Outputs and successors	Confirmed receipt
Process orientation	Decentralized
Process placement	In-sourced

Process Owner

In order to minimize process variation and leverage best practices, a single process owner should have oversight and influence over the acquisition process. The Acquisition Competency Group will be established to provide oversight of the acquisition process across the Commonwealth. DGS will continue to perform the role of day-to-day process owner. Governance issues should be addressed through agency participation in the Acquisition Competency Group. Our proposal includes assisting the Commonwealth in developing and implementing the Competency Group, governance, and process enhancements.

Resources

The Commonwealth Partners do not anticipate an impact on acquisition resources. Resources used for the acquisition process today will continue in that role, although efficiency improvements resulting from reduced duplicate and manual entry will result in time savings. For example, reconciliation of the SPCC (purchasing) card is currently time consuming and requires duplicate data entry in eVA.

Process Orientation (Centralized, Decentralized)

The Goods and Services Acquisition process uses a decentralized process orientation in that each agency is responsible for the proper execution of the acquisition processes within its organization. However, acquisition standards, policies, and procedures should be defined centrally.

Process Objectives and Key Performance Indicators (KPIs)

The objective of the acquisition process is to have an efficiently functioning procurement process that provides Commonwealth users with easy access to the goods and services they need at a reasonable cost to the Commonwealth. Our proposal is to establish Key Performance Indicators

(KPIs). Some sample KPIs are included in the table below. The Commonwealth Partners will work closely with the Commonwealth to establish meaningful enterprise-level KPIs.

Table 3-90: KPI's for Acquisition

Potential KPI	Objective
User Satisfaction with eVA	Measures user satisfaction and opportunities for improvement
Use of procurement applications other than eVA	Measures redundant procurement activity
Vendor Performance	Measures vendor performance against commitments
SWAM Policy Compliance	Measures against organization targets to improving SWAM compliance

Integration Points with Other Processes

For Goods and Services Acquisition, new integration points will primarily consist of integration with the proposed solutions for other functional areas, including the ERP Financial application (for Accounts Payable), Inventory applications (for Receiving), and ERP HR application (for approval work flow and spend authority).

Organizational Impact Considerations

We do not anticipate any significant organizational impacts at this time. We do feel there is an opportunity to review how the acquisition function is organized within the Commonwealth to streamline activities and better leverage existing resources. The Acquisition Competency Group described above will sit above the existing organization structure as an oversight and governance board.

Impact on Existing Policies and Procedures

The proposed review of existing policies and procedures will result in enhancements and other changes. As a result, some impact to existing policies and procedures will be expected. The Commonwealth Partners anticipate the impact will be minimal and incremental to well-established Commonwealth acquisition policies and procedures.

Other Risks
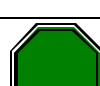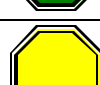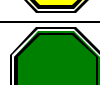
The Commonwealth Partners have recommended leveraging the existing eVA procurement system and the work done to date to make that system a success. This is a relatively low risk approach. In addition, enhancements to existing approaches will be incremental and represent a low risk approach to obtaining additional benefits from the Commonwealth acquisition process.

Improvements, Strengths, and Weaknesses Relative to As-Is Process, Including Best Practices

This section describes the impact of the To-Be environment on the major strengths and weaknesses identified in the As-Is environment. A green light indicates that an item is a strength. A red light indicates a major weakness and a yellow light indicates a minor weakness. Table 3-91 describes how the proposed solution either addresses a weakness, or builds upon a strength.

The rightmost column gives a brief description of the opportunity for re-engineering and re-solutioning arising from the strength or weakness indicated.

Table 3-91: Proposed Solution for Acquisition

As-Is	To-Be	Strength or Weakness Description	Under Proposed Solution	Re-engineering/ Re-solutioning Opportunity
🟢	🟢	Enterprise-wide procurement system (eVA)	Continue to leverage eVA as primary enterprise-wide procurement application	Increase satisfaction with and acceptance of eVA
🟡	🟢	Multiple procurement systems	Retire redundant procurement systems	Increase the use of eVA as the sole procurement system
🟡	🟢	Lack of integration	eVA will integrate with new enterprise ERP solutions	Integrate PO / receipt / invoice / payment information and processes
🟡	🟢	SWAM requirements and reporting	COVA will have SWAM compliance reports and more effectively address SWAM requirements	Conduct assessment and develop improvements to address shortcomings
🟡	🟢	New initiatives	New initiatives will be understood and accepted by agencies	Improve communication and training around new initiatives
🔴	🟡	Multiple vendor registration processes	Vendor registration will take place in one system with one master vendor file.	Conduct assessment and develop improvements around vendor registration.
🟡	🟢	Qualified and trained procurement personnel	Commonwealth procurement personnel will know how to best use eVA and acquisition processes	Improve training and communication around eVA and acquisition processes

Table 3-92: Process Improvements for Acquisition

Commonwealth Staff Suggestions for Process Improvements Gathered During Due Diligence	Commonwealth Partners Proposed Solution
Efficiency	
Increase efficiency through a reduction in duplicate data entry.	Redundant procurement systems are phased out and manual purchase order processes are replaced, increasing efficiency.
Productivity	
Increase resource productivity.	With the increased use of a single procurement system, duplicate and burdensome data entry will be decreased.
Service Delivery	
Goods and Services Acquisition functions support the delivery of procurement services to the Commonwealth.	Service delivery improves as acquisition processes and eVA acceptance improve.
Accountability	
Some due diligence respondents view eVA as a	We propose measuring user satisfaction with eVA, assessing

Commonwealth Staff Suggestions for Process Improvements Gathered During Due Diligence	Commonwealth Partners Proposed Solution
burden, whether that is due to lack of training, perceived missing functionality, lack of support, additional work, or poor performance.	resistance, and making improvements to address issues. The Acquisition Competency Group will address accountability issues.
Costs	
Maintaining duplicate procurement systems is an unnecessary cost.	As duplicate systems are phased out, the Commonwealth can better focus resources on full use of eVA as the sole procurement system

Benefits

Non-Financial

- Improve consistency of Acquisition processes, reporting, and KPIs

- Standardize on best practices across the enterprise

- Improve acquisition user satisfaction

- Eliminate duplicate data entry

- Improve supplier diversity by tracking vendors and reporting on status

- Improve contract negotiation and management by knowing plateaus, price break criteria and monthly status

- Better planning on large projects which will reduce 'emergency procurement'

- Eliminate agency logs and spreadsheets used to follow-up on purchase orders

- Eliminate PO copies/reports for anticipated warehouse receiving

- Eliminate phone calls/emails for PO info; will be available on-line

- Eliminate phone calls/emails requesting information for Invoice Payment

Financial

- Reduce duplicate procurement systems and related interface support

- Reduce duplicate entry

3.4.2 Inventory

The Commonwealth Partners' approach to redesigning the Commonwealth's Inventory Management process is to strengthen the existing Inventory Management environment by:

- Developing Commonwealth-wide policies and procedures which will establish a minimum baseline for Inventory Management across the Commonwealth

- Providing a flexible business process framework in which individual agencies need to meet their specific operational missions

- Establishing an Inventory Service Bureau

- Providing warehouse and Inventory Management systems for each of the major Commonwealth business domains (Equipment, Facilities, and Inventory Business Processes)

The first step in the approach is to establish the Inventory Management Competency Group within the Center of Excellence. The center acts as an oversight body for Inventory Management across the entire Commonwealth and is responsible to:

- Identify, develop, and distribute enterprise level Inventory Management policy
- Identify, develop, and distribute enterprise level Inventory Management procedures
- Establish minimum data model requirements
- Establish enterprise level KPIs
- Assist individual agencies (as necessary) with developing agency specific procedures directly supporting the mission of the agency
- Provide continuous improvements to inventory procedures and practices
- Monitor compliance with the Commonwealth's Inventory Management Business Process Framework.

Figure 3-49: Inventory Management Competency Group
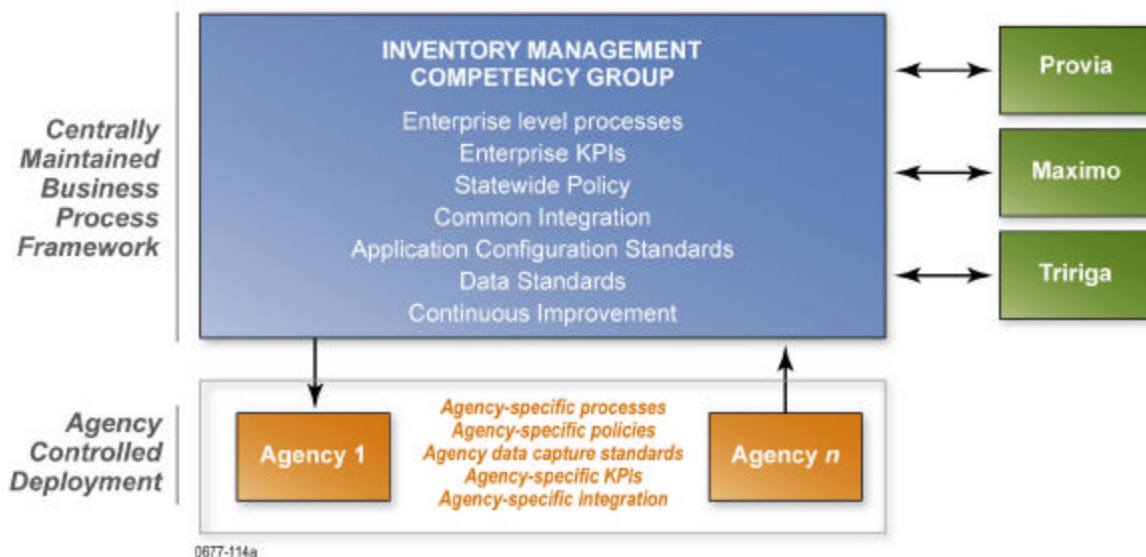
In order to support the business process framework, the Commonwealth Partners recommend that Provia Warehouse Management System (WMS) be implemented to support agencies with large inventories and distribution requirements such as DOC, VCE, and VDC. Provia provides a proven warehouse management system that is accessible over the internet providing easy access across an agency and the Commonwealth. See www.provia.com for more information. Other agencies that have less complex requirements and are more "stock room" oriented will be able to select from a short list of inventory options. The inventory functionality for these agencies could be provided by the Tririga Facility Center suite originally implemented to support Facilities Management, the Maximo suite already supporting Equipment users, or even PeopleSoft inventory. The selection of the appropriate functionality will be based on agency-specific functional requirements and application footprint. The concept is to minimize the number of software applications used by an agency. This should contribute to user satisfaction and reduce

training costs. For example, if an agency has a store room that supports the facilities maintenance department for a building complex and their primary application is the Tririga Facility Center, they should use the Tririga inventory module in order to maximize product functional integration and reduce the number of applications the user must learn.

Figure 3-50: Provia Application Architecture
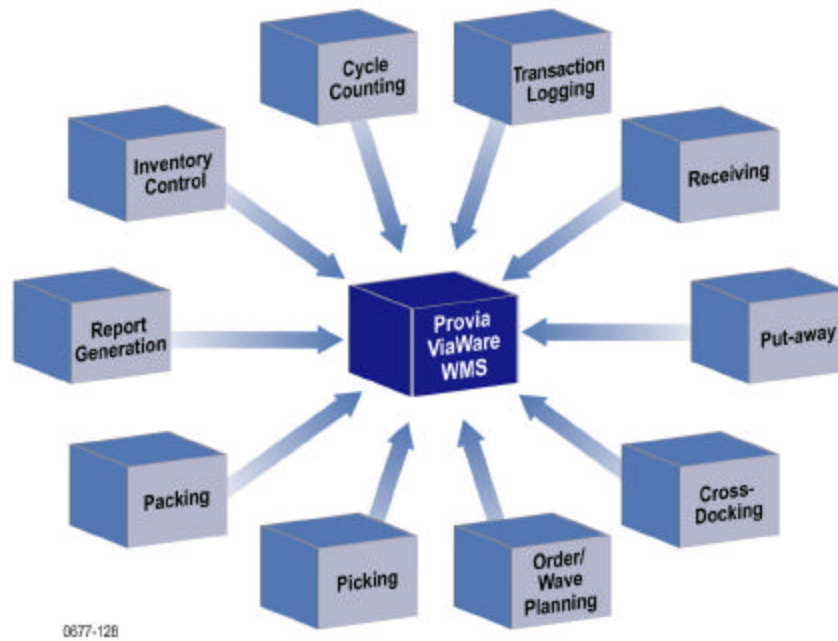
Over time all Commonwealth agencies will be migrated to the inventory management business process framework using a standard application software platform, using a common set of core processes, and a common data model and configuration standards. By establishing a standard environment, common application interfaces can be developed. This will allow all the agencies to enjoy a fully integrated system without having to have each agency individually develop the integration. Agency information can now be rolled up into a variety of levels for analysis and use in executive decision making. Furthermore, this approach makes the use of key performance indicators more meaningful at the agency level, when comparing groups of agencies, or when populating Commonwealth level performance dashboards.

Each agency will be required to work within the Inventory Management business process framework established by the Inventory Management Competency Group. At the same time it is clearly understood that each agency may have unique process, data, or integration needs. The establishment of the Center does not limit, but encourages, agencies with unique needs to establish agency level processes and integration.

Process Flow Narrative

Figure 3-51: Inventory Management Decomposition Chart
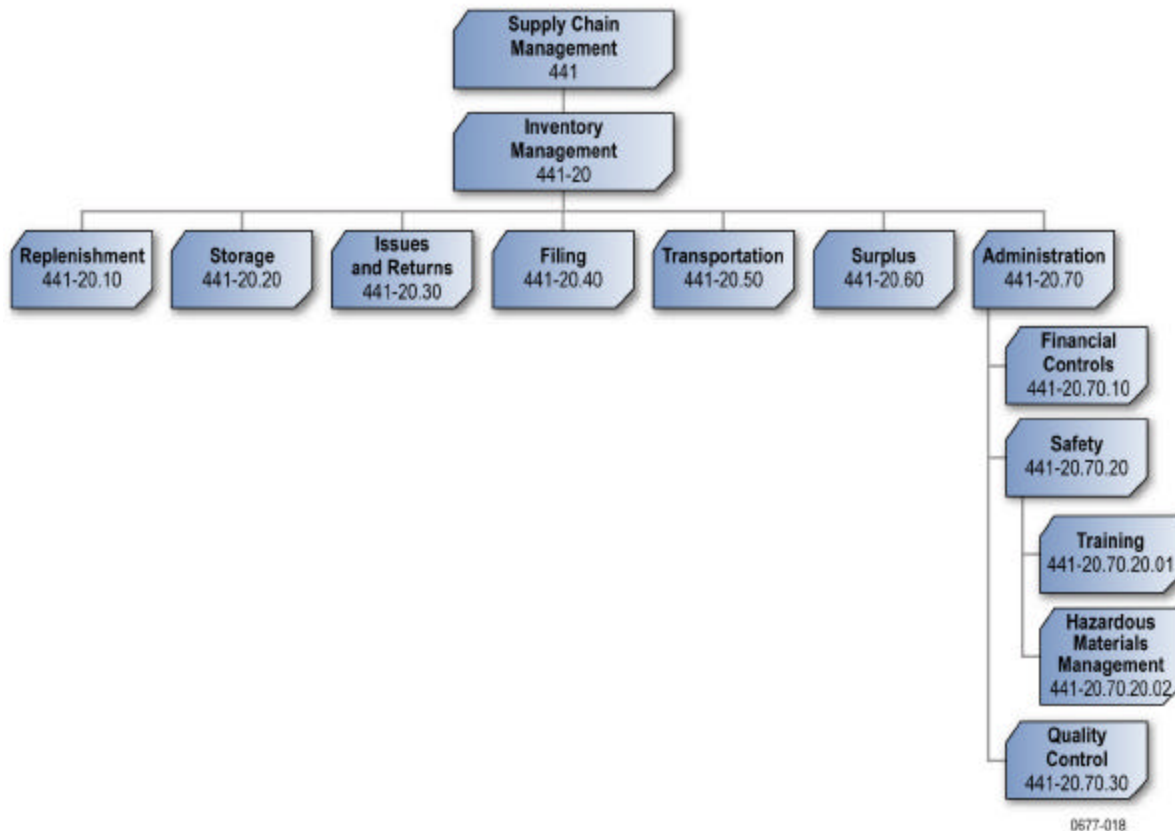
Inputs and Outputs – Predecessors and Successors

Table 3-93: Process Characteristics for Inventory Management

Characteristic	Under Proposed Solution
Replenishment	**The process of re-stocking the inventory**
Inputs and predecessors	Re-order List Purchase Requisitions
Outputs and successors	Purchase Orders Spares delivery
Process orientation	Decentralized
Process placement	In-sourced
Storage	**Manages the area where inventory items are housed**
Inputs and predecessors	Organization of shelving and space Spare parts
Outputs and successors	On-demand supply of inventory Available inventory list
Process orientation	Decentralized
Process placement	In-sourced
Issues & Returns	**The transactions performed to issue and return inventory**
Inputs and predecessors	Inventory Requests Unused material for return
Outputs and successors	Material issued Material returned to inventory
Process orientation	Decentralized
Process placement	In-sourced

Characteristic	Under Proposed Solution
Billing	**The charge sent to the customer for supplies**
Inputs and predecessors	Requests showing material usage Parts sent to a customer for his use
Outputs and successors	A billing statement showing detail of parts and usage Cost recovery
Process orientation	Decentralized
Process placement	In-sourced
Transportation	**The activity of moving inventory from one location to another**
Inputs and predecessors	Request to deliver parts Material available to ship
Outputs and successors	Shipper available to ship parts Material shipped to location Material received at location
Process orientation	Decentralized
Process placement	In-sourced
Surplus	**Excess Inventory**
Inputs and predecessors	Non-turn inventory identified Inventory reduction program
Outputs and successors	Surplus parts identified Reduced overall inventory
Process orientation	Decentralized
Process placement	In-sourced
Administration	**The management activities involved in managing inventory**
Inputs and predecessors	Employee responsibilities Business process to manage inventory
Outputs and successors	Streamlined business plan Proper inventory management
Process orientation	Decentralized
Process placement	In-sourced
Financial	**The month end costs rolled up to determine gain or loss**
Inputs and predecessors	Business controls for monthly reports Inventory Valuation Summary Report
Outputs and successors	Monthly Reports Managed inventory
Process orientation	Decentralized
Process placement	In-sourced
Safety	**The process of reviewing the workplace for potential hazards**
Inputs and predecessors	Material Safety Data Sheets Safety Program Inspections
Outputs and successors	Safe workplace All workers trained and knowledgeable
Process orientation	Decentralized
Process placement	In-sourced
Quality Control	**Performing test on certain parts to see that they perform within stated guidelines**
Inputs and predecessors	Need for quality inspection Quality inspection guidelines
Outputs and successors	Quality materials stocked Proper inventory managed parts
Process orientation	Decentralized
Process placement	In-sourced

Process Owner

In order to maintain the highest level of standardization, the Inventory Management Competency Group will be established. The group will establish those processes that are deemed to be

enterprise level processes. Each individual agency will assign owners for agency specific sub-processes.

Resources

Resources will need to be identified to participate in the Inventory Management Competency Group. Other resources that support Inventory Management today will continue to do so once the new system is implemented. However the total Inventory Management FTE count is expected to be reduced.

Process Orientation (Centralized, Decentralized)

The Inventory Management processes will use a decentralized process orientation in that each agency can define the detailed processes that are needed to support its operations. However these processes must conform to and support the Inventory Business Process Framework. Each agency will be responsible for the proper policy implementation and business process compliance. As is the case today, not all of the Inventory Management sub-processes are applicable to every agency.

Figure 3-52: Inventory Management Process Orientation
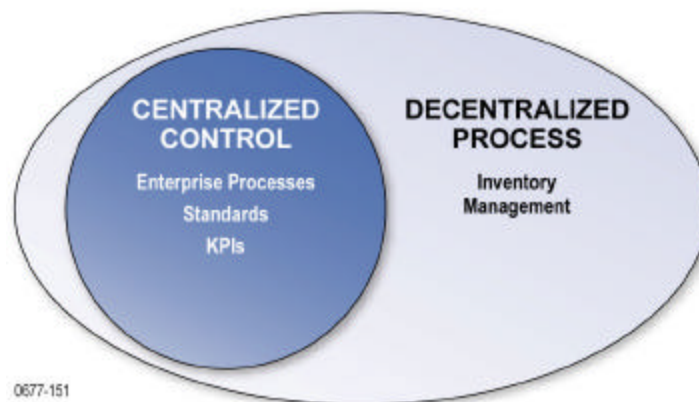
Process Placement

One option for improving Inventory Management within a secretariat is to create an Inventory Service Bureau. This entity would absorb all the participating agencies warehouses, stockrooms, floor space, and personnel providing inventory services. Consolidating execution of the inventory process into a Service Bureau has several advantages:

- Inventory Management becomes the core business function as opposed to being a secondary function. This places higher value on inventory best practices.
- It may be easier to balance agency mission and Inventory Management objectives.
- It allows for consolidation of warehouse space and provides a more common distribution method.
- It has the potential to reduce overall inventory levels through access of a broader range of inventory items.

▪ It has the potential to improve strategic procurement through consolidated purchasing.

The Inventory Service Bureau for the Secretary of Public Safety could, for example, provide Inventory Management services to the DOC, VCE, VSP, and others thus keeping focus on Public Safety related agencies and providing overall improvement and cost reductions.

Figure 3-53: Process Objectives and Key Performance Indicators (KPIs)
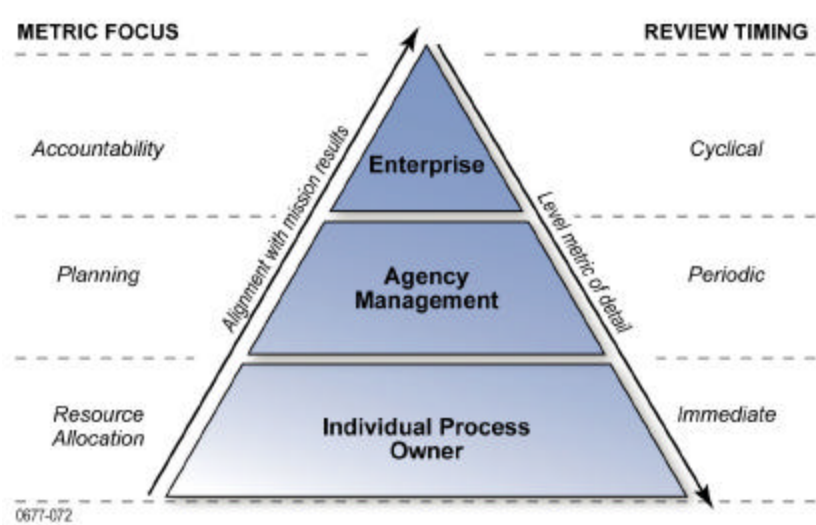
KPI Focus Levels and Timing

In order to implement enterprise level KPIs that are meaningful, the Commonwealth must have a common set of data elements supported by a common set of configuration code standards. The more standardized the data, the more useful the KPIs become. The Commonwealth Partners will work closely with the Commonwealth to establish meaningful enterprise level KPIs that will be populated and displayed through the Viador executive information dashboard tool already in use by the Commonwealth. This does not preclude the use of lower level KPIs. In fact we recommend that the use of KPIs be driven down in the organization to the lowest practical levels. Typically we would use the built-in application specific functions for individual agency or supervisor level KPIs.

Table 3-94: KPIs for Inventory Management

Potential KPI	Objective
Stock-out Rate	Measures the number of time an items was out of stock.
Inventory Valuation	Measures the current value of inventory levels.
Percentage of Non-turns	Measures inventory items that are not being consumed.
Percentage of Surplus	Measures percentage of inventory items that are obsolete.

Upon finalizing a standard set of KPIs, a benchmark for those measurements will be created against the current conditions within the Commonwealth. This establishes a point from which improvements can be planned and measured. The Inventory Management Competency Group will use this knowledge as a basis to drive continuous business process improvement.

Integration Points with Other Processes

As standard Inventory Management applications are implemented, it will be possible to maximize electronic integration with other Commonwealth processes and systems. For Inventory Management this mainly consists of integration with the PeopleSoft ERP Financials and the Commonwealth's eVA procurement system. The integration will be established through the use of a common middleware layer that simplifies the development of the interfaces and their ongoing maintenance.

Organizational Impact Considerations

In order to implement the Inventory Management Competency Group concept, it will be necessary to establish a common set of Inventory Management responsibilities within the Commonwealth. New responsibilities that support central control while allowing decentralized flexibility and execution will be paramount to overall success of the program.

In order to implement the Inventory Service Bureau concept, a new responsible entity will need to be established and the appropriate resources transferred in the bureau.

Impact on Existing Policies and Procedures

A Commonwealth-wide set of standard policies and procedures must be developed. These new policies and procedures will be aimed at implementing key industry standards and focused on establishing a balance between sound inventory management practices and support agency missions.

It is recommended that policies and minimum level procedures be instituted across the Commonwealth by the Inventory Management Competency Group while still allowing individual agencies the flexibility to define mission specific sub-processes.

Other Risks

Several of the significant risks to the implementation of an enterprise Inventory Management Competency Group and an Inventory Service Bureau are listed in Table 3-95.

Table 3-95: Risks and Mitigation for Inventory Management

Risk Item	Mitigation
Support and participation of the individual agencies For most agencies in the Commonwealth inventory and warehouse management is not a primary mission but a support function and as such does not always get the needed level of focus	Strong Organizational Change Management program highlights the benefits to the agencies .
Reliable, complete, and clean application data Any application is nothing more then a tool to manipulate data and turn it into information and knowledge	Well executed data migration plan that loads data from all available sources and addresses data validation and cleanup.
Sound training program Many times training is minimized and even seen as a one-time effort.	Development of a comprehensive training program.

Risk Item	Mitigation
Enforcement The Center for Excellence will need the proper levels of executive support to enforce compliance.	Documented and approved Center of Excellence Charter.

Improvements, Strengths, and Weaknesses Relative to As-Is Process, Including Best Practices

This section describes the impact of the To-Be environment on the major strengths and weaknesses identified in the As-Is environment. A green light indicates that an item is a strength. A red light indicates a major weakness and a yellow light indicates a minor weakness. Table 3-96 describes how the proposed solution either addresses a weakness or builds upon a strength. The rightmost column gives a brief description of the opportunity for re-engineering and re-solutioning arising from the strength or weakness indicated.

Table 3-96: Proposed Solution for Inventory Management

As-Is	To-Be	Strength or Weakness Description	Under Proposed Solution	Re-engineering / Re-solutioning Opportunity
🟢	🟢	Mission-specific Inventory Management systems	The proposed Inventory Management Competency Group fully supports and encourages agency specific business process in order to continue supporting mission specific needs.	A suite of Inventory Management tools will be available that support the diversity of inventory needs.
🟢	🟢	Financial control	Financial controls will improved through use of inventory policies and process standards.	Common KPIs will increase the effectiveness of financial control and drive continuous improvements.
🔴	🟢	No Commonwealth-wide policy for inventory management	The proposed Inventory Management Competency Group will establish Commonwealth wide policies and procedures.	New Inventory Management systems will provide the technologies to support the new policies and procedures.
🟡	🟢	Non-shared and overlapping distribution channels across agencies	The proposed Inventory Service Bureau should be able to reduce the number of overlapping distribution channels.	As part of the process for re-engineering inventory management the Commonwealth Partners will strive to eliminate unnecessary duplication of distribution channels.

The due diligence interviews and surveys raised numerous suggestions from the Commonwealth for business process improvements. Table 3-97 shows how our proposed solution for the inventory management process incorporates the related suggestions that we heard from the Commonwealth team members.

Table 3-97: Process Improvements in Inventory Management

Commonwealth Staff Suggestions for Process Improvements Gathered During Due Diligence	Commonwealth Partners Proposed Solution
Efficiency	
Standardized Inventory Management processes, goals, and objectives.	Substantial efficiency improvements in Inventory Management can be achieved by adapting the Inventory Business Process Framework.
Alignment with agency and Commonwealth objectives.	Alignment can be achieved through Commonwealth-wide policies and procedures.
Improved visibility of inventory availability.	Modern Inventory Management systems will be implemented that have extensive on-line inquiry, reporting, and KPI functionality.
Shared distribution channels.	The proposed Inventory Service Bureau should be able to reduce the number of overlapping distribution channels.
Productivity	
Standard integration to financial systems.	With the implementation of a common suite of Inventory Management tools, a standard integration will be implemented to financial and purchasing systems.
Common baseline policy and procedures.	Substantial efficiency improvements in Inventory Management can be achieved by adapting the Inventory Business Process Framework.
Service Delivery	
Improved warehouse and stockroom space management.	Inventory Management functions support the delivery of materials to departments that enable them to meet the Agency mission. Improving inventory management improves the ability to support the agency mission while maintaining a minimum inventory value.
Improved order fulfillment.	The new Inventory Management systems will allow on-line integration to order place systems. Improved Inventory Management will improve fulfillment by better aligning inventory on hand items with agency missions.
Accountability	
Provide visibility into inventory valuation.	Visibility into inventory valuation will be achieved through the use of KPIs.
Visibility into surplus inventory.	Modern Inventory Management systems will be implemented that have extensive on-line inquiry, reporting, and KPI functionality.
Implementation of Inventory Management standards by which to measure compliance.	Accountability for Inventory Management is improved through tracking of key inventory measurements such as inventory value.
Costs	
Reduce overall inventories while meeting agency objectives.	It has been shown repeatedly that the total inventory on hand can be significantly reduced through improving Inventory Management processes, establishing standards, and coupling the inventory function to the agency mission.
Reduce overall warehouse and inventory space requirements.	Through improved management of inventory items on-hand and through consolidation, the Commonwealth should be able to reduce total warehouse and stock room space.
Reduce costs through shared distribution channels.	As part of the process for re-engineering inventory management, the Commonwealth Partners will strive to eliminate unnecessary duplication of distribution channels.

Benefits

Non-Financial

- Improved alignment with agency mission
- Standard processes simplifies cross training

Financial

- Reduced inventory value
- Reduced inventory space requirements
- Shared distribution channels

Supply Chain Management Tower Conclusion

The Commonwealth Partners believe the proposed solution for Supply Chain Management best helps the Commonwealth to continue leading the country as the best managed state in the nation (according to Government Performance Project). This solution puts in place processes which are integrated across the Commonwealth, delivers supply chain management services more efficiently, economically and consistently, eliminates redundant systems and data entry, and provides the tools and baseline to improve performance on a continuous basis. We also believe this solution preserves the existing strengths of the Commonwealth's existing processes and makes significant strides in addressing the identified weaknesses.

In The Interim Report of Council on Virginia's Future dated January 12, 2005, specific goals for Continuous Improvement were identified:

- Cost reductions
- Operational Efficiencies
- Programmatic Effectiveness

We are confident that the proposed solution helps the Commonwealth make significant progress in achieving these goals.

- Cost reductions are achieved through the elimination of duplicate systems, reduction in duplicate data entry, and reduction in application maintenance costs through outsourcing.
- Supply chain operational efficiencies are achieved through the redirection of staff to more strategic activities or back toward mission-facing activities, the standardization of supply chain processes across agencies and the sharing of information across agencies.
- Programmatic effectiveness for supply chain programs are achieved through consistent policies and procedures across agencies, the re-shaping of agency policies and practices to permit greater sharing of resources and data across agencies, development of metrics to measure performance and effectiveness and establish the baseline for improvements.

The same report identified the guiding principles to ensure that continuous improvement efforts are focused on important activities:

- Improvement goals must be realistic

- Collaborative behavior within and among agencies is expected

- Change must be sustainable

- Benefits must be measurable

- Accountability must be clear

The proposed solution for supply chain management supports the focus on these principles.

- The initial goals contained within this proposed solution are very realistic and are based on a very conservative business case. Significant improvements will be realized through the implementation of the processes, technologies and reorganization included in the solution. Creation of the Center of Excellence establishes a mechanism to continue the improvement efforts. It will support the establishment of a baseline from the point of implementation and then identify the realistic and incremental improvements possible for the future.

- Change is sustained both through the use of the enabling technologies and creation of the Supply Chain Management Service Bureau. The establishment of the key performance indicators further enhances the ability to sustain change. Commonwealth executives will get early warning of less than expected performance and be able to rapidly identify the causes and address them.

- The proposed solution creates the data to support benefit measurement that is lacking today.

- Accountability for non-strategic supply chain activities is shifted to the Supply Chain Management Competency Groups within the Enterprise Center of Excellence (COE). Managers with each agency are responsible for achieving compliance with the Business Process Framework.

The Commonwealth Partners believe this Supply Chain Management solution generates the best benefits realization case for the Commonwealth, which is outlined in Section 5 of this document.

Our methodology and approach for achieving this vision are outlined in Section 4.

3.5   IT Management

Introduction

During the Enterprise due diligence process, the Commonwealth Partners were able to gather information from the Executive Branch agencies of the Commonwealth to obtain an understanding of the Commonwealth current maintenance environment. It was discovered that the Commonwealth current maintenance environment is decentralized. That is, those people who maintain the current Enterprise Applications are located in each agency. The As-Is process for application maintenance results in a fragmented and sub-optimized use of enterprise application maintenance processes and resources. When multiple organizations perform the same activity in different ways, there is limited ability to gain economies of scale and efficiencies across the organization.

As the first step in building an enterprise maintenance organization the Commonwealth Partners propose to assume responsibility for all enterprise application maintenance activity currently performed by the Commonwealth.

The advantages of the Commonwealth Partners assuming the Enterprise Applications maintenance are as follows:

1. **The Commonwealth Partners will centralize the maintenance of the Enterprise Applications**

    Enterprise Applications *Demand* Centralized Application Maintenance. Without centralizing the maintenance activity after the application rollout, the resulting applications will revert to the agency-specific applications they have always been. To that end, the Commonwealth Partners propose to assume responsibility for all enterprise application maintenance activity currently performed by the Commonwealth as a first step in building an enterprise maintenance organization.

    Centralizing the application maintenance environment will:

    - Eliminate resource bottlenecks, there will be a pool of resources that will perform activities across agencies so that peaks and valleys of activity across agencies can be better managed. There is a variety of skills currently required to support the Commonwealth Enterprise applications. Shown below are the skills identified during the due diligence process that will make up the resource pool.

        – Client Server   34%
        – Mainframe   14%
        – Packaged (PSFT, ORCL)   15%
        – PC   14%
        – Web   23%

    - Reduce costs, by reducing the total number of resources required to perform maintenance of legacy applications

- Provide access to specific skills to all agencies, the Commonwealth Partners can draw on the expertise of its entire workforce, rather than having to hire and train a new employee

2. **The Commonwealth Partners will implement a package of state-of-the-art processes based on Industry best practices which will provide the Commonwealth with the opportunity for improvement of the overall quality of the Application Maintenance process thus reducing the number of defects seen by the end users** and provide the Commonwealth the ability to accurately monitor and measure the efficiency and effectiveness of their enterprise application maintenance organization. The Commonwealth Partners will implement SEI CMMI Level 3 processes to meet these needs. Industry-wide data demonstrates that implementing SEI CMMI Level 3 compliant processes contributes to significant productivity and quality improvements, including reductions in the cost to find and fix defects, decreasing the time needed to complete tasks, increasing the predictability of meeting schedules, reducing the number of defects. The Commonwealth Partners have implemented the CMMI processes in numerous large state agencies. The actual results achieved by one large state agency are displayed in the chart below. Release 1 was completed at the same time as the completion of the implementation of all of the CMMI processes.

Figure 3-54: CMMI Results for Large State Agency
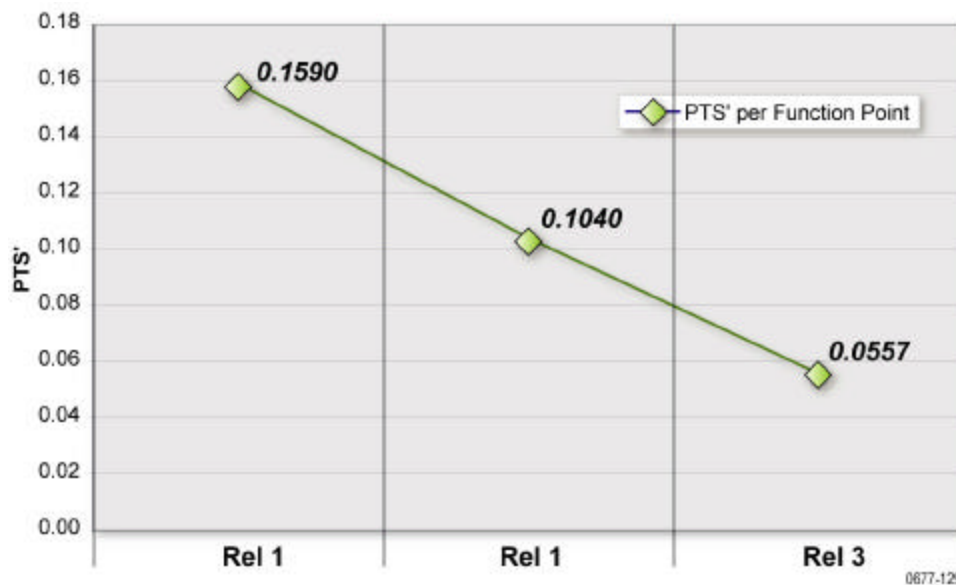
Function points are an Industry standard for measuring size and complexity of applications changes.

3. **The Commonwealth Partners will implement a process for performing the upgrades of the PeopleSoft and Oracle software as required.** This will eliminate the need for the Commonwealth Agencies (VDOT, VITA, DGS, DMV, DOE, DMAS, DEQ, and DSS) to manage this process and will prepare the Commonwealth applications for migration to the new integrated versions of PeopleSoft and Oracle, known as Fusion. The Commonwealth Partners will invest in training for the transitioned maintenance employees in the normal course of business, so that the Commonwealth will not be required to incur this expense. This will further mitigate the normal risk incurred with any major application upgrades.

The IT Management section is divided into three subsections.

Section 3.5.1. Legacy Support will detail the transition process of moving the maintenance work from the Commonwealth to the Commonwealth Partners, the operational business flow of performing all types of maintenance activity including associated benefits and the benefit to the impacted employees.

Section 3.5.2. To-Be Process Definition for Enterprise Application Integration will present a description of the process that will establish the architecture that will support the application integration that is required for future business process improvement.

Section 3.5.3. Ongoing ERP Support will detail the transition process of maintaining and supporting the new Enterprise Applications once they have been implemented. This section will also include the benefits to the affected employees and the advantages of the off-site shared-service environment.

3.5.1 Legacy Support

Overview

As stated in the Introduction, the Commonwealth Partners propose to assume responsibility for all enterprise application maintenance activity currently performed by the Commonwealth.

The benefits the Commonwealth will experience from the Commonwealth Partners assuming responsibility for maintenance are as follows:

- Reduce the overall cost of ongoing maintenance through process and utilization improvements and economies of scale. This will be accomplished by reducing the total number of resources required to perform maintenance of legacy applications.

- Provide job opportunities for employees displaced by the retirement of applications and overall reduction in resources required to perform legacy maintenance. Since the Commonwealth Partners will provide centralized application maintenance of new enterprise applications, the transitioned employees can be trained to perform this maintenance once they are no longer required to perform maintenance of the legacy applications. If the Commonwealth were to continue to maintain the legacy applications on their own, they would have to determine where to find job opportunities for their employees as applications are retired.

- Reduce or eliminate resource bottlenecks in required maintenance activities. With a small number of resources dedicated to each agency, the agencies cannot manage peaks and valleys in work across agencies. With the Commonwealth Partners managing legacy and enterprise application maintenance in a centralized environment, there will be a pool of resources that will perform activities across agencies so that peaks and valleys of activity across agencies can be better managed.

- Give the Commonwealth access to specialized skills that are necessary but are prohibitively expensive to build in an in-house maintenance environment. If specialized skills are needed for short periods of time, the Commonwealth Partners can draw on the expertise of its entire

workforce, rather than having to hire and train a new employee or go through the procurement of new contract services.

- Reduce the risks associated with attrition caused by the aging workforce phenomenon and other natural reasons by leveraging the Commonwealth Partners' service professionals to quickly backfill resource gaps. If the Commonwealth continues to manage its own application maintenance, any attrition will have to be managed by hiring and training new people specific to that role. The Commonwealth Partners have many customers with needs similar to the Commonwealth's, so finding a specific skill to fill an open position is likely to be a much faster and more predictable process.

- Identify and seed a site to become a shared service Enterprise Application development and maintenance center in close proximity to Washington, DC such that it can be utilized to serve Federal Government agencies. We intend the Commonwealth to benefit from the economies of scale and process involved, and would like to site this facility in Virginia, rather than Maryland or Washington, D.C.

- The Commonwealth Partners will perform all PeopleSoft, Oracle and other required upgrades as part of the maintenance process so that the Commonwealth agencies will not each be required to incur this expense on its own.

The remainder of this section will detail the transition process of moving the maintenance work from the Commonwealth to the Commonwealth Partners, the operational business flow of performing all types of maintenance activity including associated benefits, and the benefits to the impacted employees.

Process Flow Narrative

All of the Commonwealth Partners' processes, to transition the Commonwealth's maintenance activities to the Commonwealth Partners, are geared towards causing no disruption of service.

We will transition all enterprise application maintenance tasks to a distributed team that is both onsite at several of the Commonwealth's Richmond, Virginia locations and off-site at the Commonwealth Partners shared services center to be located in Virginia. The team is distributed in order to maintain the communication advantages of being close to the Commonwealth and gain the cost advantages of resource pooling in a shared services center. We will transfer and integrate Commonwealth enterprise application maintenance employees into the organization. Our success will be partially linked to retaining key personnel with Commonwealth business skills and knowledge and sharing their knowledge across the entire team. The transition process is described in the Organization Impact Considerations later in this section.

The list of applications affected by this transition is based on information gathered in due diligence and is shown in Figure 3-55.

Figure 3-55: Applications Affected by Maintenance Support

Agency	Tower	Application Name	Application Type
ABC	Cross Functional	Document Imaging	Custom-built – Agency only
ABC	Cross Functional	Transnet	Commercial package – Agency only
DCR.	Cross Functional	Conservation Reserve Enhancement Program	Custom-built – Agency only
DCR.	Cross Functional	IDSS	Custom-built – Agency only
DHRM.	Cross Functional	Agency Web Portal	Custom-built – State wide
DOA.	Cross Functional	Reportline - Web Reports Viewing and Downloading Site	Custom-built – State wide
DOAV.	Cross Functional	AIMS	Custom-built – Agency only
DOAV.	Cross Functional	FOS/NT	Commercial package – Agency only
DOF.	Cross Functional	IMS	Custom-built – Agency only
DOF.	Cross Functional	NIMS	Custom-built – Agency only
DPB.	Cross Functional	FATS	Custom-built – State wide
DPB.	Cross Functional	WebBears	Custom-built – State wide
DSS.	Cross Functional	CARS Interface - Bi-directional interface	Custom-built – Agency only
DSS.	Cross Functional	eVA Interface	
DSS.	Cross Functional	LASER Interface	Custom-built – Agency only
DVS.	Cross Functional	One-VA VPN-VA applications	Commercial package – Agency only
FDFP	Cross Functional	FSTRS	Custom-built – Agency only
LVA	Cross Functional	Access	Custom-built – Agency only
VADOC.	Cross Functional	Information Data System	Custom-built – Agency only
VADOC.	Cross Functional	OBSCIS	Custom-built – Agency only
VADOC.	Cross Functional	Public Web Site	Custom-built – Agency only
VADOC.	Cross Functional	Security Threat Group	Custom-built – Agency only
VADOC.	Cross Functional	State Police Interface	Custom-built – Agency only
VADOC.	Cross Functional	VACCIS	Custom-built – Agency only
VADOC.	Cross Functional	Virginia Parole Board	Custom-built – Agency only
VADOC.	Cross Functional	Virtual Library	Custom-built – Agency only
VDEM.	Cross Functional	ETD	Custom-built – Agency only
VDEM.	Cross Functional	HMBP	
VDOT.	Cross Functional	TRNS*PORT	Commercial package – Agency only
	Cross Functional	NFIRS (VFIRS)	Commercial package – State wide
DGS.	Administration	First Service (Web-based Trouble Call Reporting tool for Facilities Management Calls)	Custom-built – Agency only
DGS.	Administration	Maximus - Facilities Focus (Real Property & Leasing Modules-PLATS)	Commercial package – Agency only
DGS.	Administration	Maximus Facilities Focus (Facilities Management and Inventory -FME)	Commercial package – Agency only
DOA.	Administration	FAACS - Fixed Asset Accounting and Control System	Custom-built – State wide
TRS.	Administration	VAPS - Virginia Agency Property System	Custom-built – Agency only
VDOT.	Administration	Equipment Management System (EMS)	Custom-built – Agency only
VDOT.	Administration	Program Project Management System (PPMS)	Custom-built – Agency only
VDOT.	Administration	Right of Way and Utility Management System (RUMS)	Custom-built – Agency only
ABC	Administration	Lease & Facility Mgt.	Custom-built – Agency only
DCR.	Administration	Vehicle Maintenance System	Custom-built – Agency only
DMME.	Administration	Fleet Management	Custom-built – Agency only
DMV.	Administration	DMV Facilities System - Tracks contracts, leases and maintenance for all DMV owned and leased property. Other facility related data, such as aquired date, occupied date, address, building square footage, etc. is maintained also.	Custom-built – Agency only
NVTC.DMHMRSAS.	Administration	Fixed & Controllable Asset DB	Custom-built – Agency only
SSVTC	Administration	Toolbook	Commercial package – Agency only
TRS.	Administration	UPS- Unclaimed Property System	Custom-built – Agency only
VDACS	Administration / Inventory	PCISYS-Computer equipment inventory system. Allows for tracking of computer equipment, including purchase information, maintenance information, and disposal information.	Custom-built – Agency only
VEC.	Administration	Inventory / Purchasing - maintains agency supplies inventory.	Custom-built – Agency only
VEC.	Administration	Property Accounting - used to maintain agency property records in lieu of FAACS.	Custom-built – Agency only
ABC	Administration	Records Management	Custom-built – Agency only
ABC	Administration	Supply & Equipment	Custom-built – Agency only
DCJS.	Administration	Computer Equipment Inventory System	Custom-built – Agency only
SSVTC	Administration	Transportation Tracking System	Custom-built – Agency only
DCR.	Administration	NH Project Tracking System	Custom-built – Agency only
DGS.	Administration	Equipment Management System (EMS - Manages Fleet Pool Cars - A VDOT system scheduled to be replace 9/2005)	Custom-built – Agency only
DGS.	Administration	Parking-CAPS	Custom-built – Agency only
DGS.	Administration	TripCar (Fleet Management Rental Car Reservation Web System)	Custom-built – Agency only
DMHMRSAS.	Administration	DataStream-Maint. Mgt. Sys.	Commercial package – Agency only
DMV.	Administration	Attendance Reporting System	Custom-built – Agency only
DOAV.	Administration	Aircraft Licensing	Custom-built – Agency only
DVS.	Administration	BOSS-Burial Operating Support System	Commercial package – State wide
SSVTC	Administration	MP2	Commercial package – Agency only
TRS.	Administration	VACC-Auto Insurance	Commercial package – Agency only
VADOC.	Administration	Adult Grievance System	Custom-built – Agency only
VADOC.	Administration	DOCNET Intranet	Custom-built – Agency only
VADOC.	Administration	PreSentence Investigation	Custom-built – Agency only
VADOC.	Administration	Visitor Tracking	Custom-built – Agency only
VDACS	Administration	Vehicle-Allows for tracking of agency-owned and state-owned vehicles used by agency employees.	Custom-built – Agency only
VDEM.	Administration	Jurisdictions - local emergency management information	Custom-built – State wide
VDEM.	Administration	Lat/Long -predict flying times/distances	Custom-built – Agency only
VDEM.	Administration	Medflight - track response of Medflight helicopters	Custom-built – Agency only
VDEM.	Administration	Online EOC - Contacts database	Custom-built – State wide

VDOT.	Finance	Cash Forecasting	Commercial package – Agency only
VDOT.	Finance	Financial Management System (FMSII)	Commercial package – Agency only
VDOT.	Finance	Financial Planning - Budget Spreadsheet	Custom-built – Agency only
VSP.	Finance	GLS - General Ledger System	Custom-built – Agency only
ABC	Finance	Financial System	Commercial package – Agency only
DCE.	Finance	CarsTran - CARS transaction analysis and reporting tool	Custom-built – Agency only
DCE.	Finance	FIReS - Financial Information and Reporting System	Custom-built – Agency only
DCR.	Finance	Account Receivable System	Custom-built – Agency only
DCR.	Finance	Budget Tracking System	Custom-built – Agency only
DCR.	Finance	Finance Monthly Reports	Custom-built – Agency only
DCR.	Finance	Revenue Tracking System	Custom-built – Agency only
DEQ	Finance	Oracle Financials	Commercial package – Agency only
DMA	Finance	Cash Management System	Custom-built – Agency only
DMME.	Finance	Accounts Payable	Custom-built – Agency only
DMME.	Finance	Budget Forecasting/Tracking	Custom-built – Agency only
DMME.	Finance	Federal Drawdowns	Custom-built – Agency only
DMME.	Finance	Financial Management Assistance (Grant Ledger, Coal Mine Pool Bond Tracking, Coal Mine Bond Forfeiture Tracking,Inter-Agency Transfer, Accounts Receivables)	Custom-built – Agency only
DMME.	Finance	Fixed Assets Accounting (FAACS)	Custom-built – Agency only
DMV.	Finance	Accounts Receivable System	Custom-built – Agency only
DOA.	Finance	CARS - Commonwealth Accounting and Reporting System	Custom-built – State wide
DOA.	Finance	FINDS - Financial Information Downloading System	Custom-built – State wide
DOAV.	Finance	AAS	Custom-built – Agency only
DPB.	Finance	BudgetWise	Custom-built – Agency only
DPB.	Finance	ExpendWise	Custom-built – Agency only
DRS/WWRC	Finance	Budget (agency distribution of funds)	Custom-built – Agency only
DRS/WWRC	Finance	Voucher (invoice processing)	Custom-built – Agency only
NVTC.DMHMRSAS.	Finance	Peachtree	Commercial package – Agency only
TRS.	Finance	LGIP- Local Government Investment Pool	Custom-built – Agency only
TRS.	Finance	Recon Plus - Reconciliation	Commercial package – Agency only
TRS.	Finance	Series II - LGIP and Trust Accounting	Commercial package – Agency only
VADOC.	Finance	Inmate Trust	Custom-built – Agency only
DMHMRSAS.	Finance	FMS-Financial Mangement System	Commercial package – Agency only
VDACS	Finance	BUDSYS-Budetary System. Used to develop the budget according to requirements of the Dept. of Planning and Budget, and to record budgetary changes during the course of the budget cycle. Helps to prepare adjustments to PROBUD.	Custom-built – Agency only
VDACS	Finance	FINSYS-Financial Management System. Used to enter and validate all financial transactions to be fed to CARS, and to produce management reports.	Custom-built – Agency only
VDACS	Finance	Revenue Management System-used to bill and collect receivables for multiple program areas. Good managment reporting capability.	Custom-built – Agency only
VDEM.	Finance	invoice Tracking - financial	Custom-built – Agency only
VDEM.	Finance	Pay Tracker - financial	Custom-built – Agency only
VDEM.	Finance	SPCC - financial	Custom-built – Agency only
VDH	Finance	Financial and Administrative Service System	Custom-built – Agency only
VEC.	Finance	SESA (budget, general ledger, cost accounting, etc) used for requireded Federal grants management cost allocations & reporting.	Commercial package – Agency only
VITA.	Finance	CARS interface	Custom-built – Agency only
VMFA	Finance	MIP - Not for Profit Accounting	Commercial package – Agency only
DMAS.	Finance	Oracle Financials	Commercial package – Agency only
DMV.	Finance	Oracle Financials	Commercial package – Agency only
DSS.	Finance	BRS Budget Request System	Custom-built – Agency only
DSS.	Finance	Cost Allocation	Custom-built – Agency only
DSS.	Finance	FAAS 11i - Financial system - General Ledger, Accts Payable and Purchasing	Commercial package – Agency only
DSS.	Finance	LASER 11i - Local Agency Reimbursement	Commercial package – Agency only
DSS.	Finance	SUPE Batch System for payments received	Custom-built – Agency only
DGS.	Finance	PeopleSoft Financials 8.4 (GL, AP, AR, Budget)	Commercial package – Agency only
VITA.	Finance	Peoplesoft AP, GL, AR, AM, Purchasing	Commercial package – Agency only
VITA.	Finance	VITA Budget(BERT)	Custom-built – Agency only
ABC	Finance	Wine Tax	Custom-built – Agency only
DCE.	Finance	AmexDB - Amex spending tracking and reporting tool	Custom-built – Agency only
DMAS.	Finance	Third Party Liability Recovery System	Custom-built – Agency only
DMHMRSAS.	Finance	AVATAR-Client Billing	Commercial package – Agency only
DMHMRSAS.	Finance	CSB Quarterly Reporting	Custom-built – Agency only
DMV.	Finance	Refund System	Custom-built – Agency only
DMV.	Finance	Returned Check System	Custom-built – Agency only
DOA.	Finance	Complete statewide financial management systems inventory available upon request	
DOA.	Finance	EDI - Electronic Data Interchange	Commercial package – State wide
DSS.	Finance	APECS Payments and Case mgmt for Child Support	Custom-built – Agency only
DSS.	Finance	ARCHKS	Custom-built – Agency only
DSS.	Finance	RMS - Statistical Random Moment Sampling	Custom-built – Agency only
TRS.	Finance	Civitias - Risk Management Claims System	Custom-built – Agency only
TRS.	Finance	ED2 - Check Formatting Software	Commercial package – Agency only
TRS.	Finance	Postal Soft - Postal Service coallation software	Commercial package – State wide
TRS.	Finance	SPDA	Custom-built – Agency only
VDEM.	Finance	Application Tracker - financial	Custom-built – Agency only
VDEM.	Finance	Grant Tracker - financial	Custom-built – Agency only
VDEM.	Finance	Incident Tracking - financial	Custom-built – Agency only
VDEM.	Finance	OCP Tracker - financial	Custom-built – Agency only
VSP.	Finance	CHB - Criminal History Billing	Custom-built – Agency only
VSP.	Finance	FTB - Firearms Transaction Billing	Custom-built – Agency only
VSP.	Finance	VEX - Vehicle Expense	Custom-built – Agency only

DCE.	Human Resources	Applicant Tracking System (ATS)	Custom-built – Agency only
DGS.	Human Resources / Time and Labor	PeopleSoft 8.1 (Applicant Intake and Tracking)	Commercial package – Agency only
DHRM.	Human Resources	Applicant flow	Custom-built – State wide
DMME.	Human Resources / Applicant Intake and Recruiting	Applicant Tracking	Custom-built – Agency only
DMV.	Human Resources / Applicant Intake and Recruiting	Online State Application - Allows internal and external customers to apply for DMV jobs via the Internet	Custom-built – Agency only
DPB.	Human Resources	Applicant Tracking and Employee Training	Custom-built – Agency only
DRS/WWRC	Human Resources / Applicant Intake and Recruiting	Applicant Tracking (vacant position / hire process)	Custom-built – Agency only
DSS.	Human Resources	HRMTrack State and Local position and applicant tracking	Custom-built – Agency only
DSS.	Human Resources	Recruitment	Custom-built – Agency only
VDACS	Human Resources / Applicant Intake and Recruiting	Applicant Tracking.	Custom-built – Agency only
VDEM.	Human Resources	Action Tracking System -track resource request, etc during declared emergencies	Custom-built – Agency only
VEC.	Human Resources	Time & Leave Recordkeeping - captures timesheet data used by the SESA grants management accounting system.	Custom-built – Agency only
VSP.	Human Resources	LAUD - Leave Audit	Custom-built – Agency only
VSP.	Human Resources	OTP - Overtime Payroll	Custom-built – Agency only
ABC	Human Resources	Human Resources	Custom-built – Agency only
ABC	Human Resources	Incident Based Reporting	Commercial package – Agency only
DCE.	Human Resources	Local Employee Tracking System (LETS)	Custom-built – Agency only
DCJS.	Human Resources	HRIS - Human Resource Tracking System	Custom-built – Agency only
DCR.	Human Resources	Employee Phone Directory	Custom-built – Agency only
DCR.	Human Resources	HR Profile	Custom-built – Agency only
DHRM.	Human Resources	BES - The Benefits Eligibility System (BES) was developed in 1988 and is a subsystem of PMIS. Benefits Administrators across the Commonwealth use the system to determine eligibility and enroll employees, retirees, and extended coverage beneficiaries in th	Custom-built – State wide
DHRM.	Human Resources	BES-VIPERS interface	Custom-built – State wide
DHRM.	Human Resources	EEO Assessment	Custom-built – State wide
DHRM.	Human Resources	EEO Calculator	Custom-built – State wide
DHRM.	Human Resources	PMIS - The Personnel Management Information System (PMIS) is an on-line transaction-based system. PMIS contains employee and benefits records of all active and separated employees for the executive branch, higher education faculty, and employees of certai	Custom-built – State wide
DHRM.	Human Resources	PMP - Perform Management rating evaluation for an employee	Custom-built – State wide
DHRM.	Human Resources / Applicant Intake and Recruiting	RECRUIT - The state's job posting system. It combines PMIS data with data provided by agencies to produce descriptions of vacant classified positions for which the state is currently recruiting.	Custom-built – State wide
DHRM.	Human Resources / Applicant Intake and Recruiting	Workforce Query tools	Custom-built – State wide
DMA	Human Resources	Human Resources / Position Control	Custom-built – Agency only
DMHMRSAS.	Human Resources	EEO Tracking	Custom-built – Agency only
DMV.	Human Resources / Time and Labor	HR Interface - Application allows for flexible reporting on bi-weekly PMIS downloads in addition to other functions as follows:Standard classified/P-14 reporting; Applicant tracking; Alternate work schedule reporting; EWP ratings; Performance Plan trackin	Custom-built – Agency only
DOA.	Human Resources / Payroll	CIPPS - Commonwealth Intergrated Personnel and Payroll System	Commercial package – State wide
DOA.	Human Resources / Payroll	Payline - Web Payroll/Leave Information Site	Custom-built – State wide
DRS/WWRC	Human Resources	EEO (Equal Employment Opportunity)	Custom-built – Agency only
DRS/WWRC	Human Resources	HRS (employee information)	Custom-built – Agency only
DRS/WWRC	Human Resources / Payroll	Payroll (employee pay)	Custom-built – Agency only
DRS/WWRC	Human Resources	Resource Directory	Custom-built – Agency only
DSS.	Human Resources	LETS - COTS Local Employer Tracking System	Commercial package – Agency only
NVTC.DMHMRSAS.	Human Resources	Human Resource	Custom-built – Agency only
SSVTC	Human Resources	Human Resource & Tracking System	Custom-built – Agency only
VADOC.	Human Resources / Payroll	Inmate Payroll	Custom-built – Agency only
VDACS	Human Resources / Time and Labor	PMIS-Allows for reporting of information from the state Personnel Management Information System.	Custom-built – Agency only
VDEM.	Human Resources	Rolodex - contact information	Custom-built – Agency only
VEC.	Human Resources	HR reporting - Uses CIPPS, PMIS & internally maintained files to provide HR reports that are not otherwise available.	Custom-built – Agency only
VITA.	Human Resources / Human Resources Management	Personnel System	Custom-built – Agency only
VSP.	Human Resources	HR - Human Resource Management	Custom-built – Agency only
VSP.	Human Resources	WAGE - Tracks Wage employees information and time	Custom-built – Agency only
VSP.	Human Resources	WARS - Weekly Activity Reporting System	Custom-built – Agency only
WSH	Human Resources	HR Dbase	Custom-built – Agency only
ABC	Human Resources / Time and Labor	Time Keeping	Custom-built – Agency only
DGS.	Human Resources / Time and Labor	PeopleSoft 8.2 -(Time and Labor)	Commercial package – Agency only
WSH	Human Resources	Sup Leave Dbase	Custom-built – Agency only
WSH	Human Resources	TMKP--OTST	Custom-built – Agency only
DCE.	Human Resources / Applicant Intake and Recruiting	AESIS - Adult Enrollment and Student Info System	Custom-built – Agency only
DCE.	Human Resources	AESIS - Enrollment Certification	Custom-built – Agency only
DCJS.	Human Resources	Event Registration System	Custom-built – Agency only
DHRM.	Human Resources	EmployeeDirect - Employee portal for health benefits	Custom-built – Agency only
DHRM.	Human Resources	ESP - Employee Sugestion Program	Custom-built – State wide
DHRM.	Human Resources / Applicant Intake and Recruiting	VirginiaJobs - Recruitment web portal for public	Custom-built – State wide
DSS.	Human Resources	Assisted Living	Custom-built – Agency only
DVS.	Human Resources	RVD-Representative Veterans Database	Custom-built – Agency only
DVS.	Human Resources	Veterans Database-State Approving Agency	Custom-built – Agency only
NVTC.DMHMRSAS.	Human Resources / Payroll	FMS	Commercial package – Agency only
NVTC.DMHMRSAS.	Human Resources	Kronos Timekeeping	Commercial package – Agency only
SSVTC	Human Resources / Payroll	KRONOS	Commercial package – Agency only
VADOC.	Human Resources	Background Investigations	
VITA.	Human Resources	(Telco Budget and Resource Forecasting-Telco)	Custom-built – State wide
VITA.	Human Resources	Budget & Resource Forcasting (CSS)	Custom-built – Agency only
WSH	Human Resources	csdc9917	Custom-built – Agency only
WSH	Human Resources	DBPoster	Custom-built – Agency only

DCJS.	Supply Chain Management	Shopping Cart - Client and Management interfaces	Custom-built – Agency only
DRS/WWRC	Supply Chain Management	e-Requisition (automated requisition approval flow)	Custom-built – Agency only
DCE.	Supply Chain Management	Raven - Purchase Order Entry	Custom-built – Agency only
DMME.	Supply Chain Management	Procurement (Requisitions/Orders/Receiving)	Custom-built – Agency only
VSP.	Supply Chain Management	MMS - Materials Management System	Custom-built – Agency only
VDOT.	Supply Chain Management	Web Inventory Management System (WebIMS)	Custom-built – Agency only
ABC	Supply Chain Management	Demand Forecasting	Commercial package – Agency only
ABC	Supply Chain Management	Inventory & Product Sales	Custom-built – Agency only
ABC	Supply Chain Management	Point of Sale	Commercial package – Agency only
ABC	Supply Chain Management	Warehouse Management System	Commercial package – Agency only
DCR.	Supply Chain Management	Inventory Tracking System	Custom-built – Agency only
DMME.	Supply Chain Management	Perpetual Inventory (Inventory control of office/garage expendable items)	Custom-built – Agency only
DMV.	Supply Chain Management	CSCNet Inventory Management: This is a set of functions and processes within the Customer Service Center Network ('CSCNet') that manages the receipt, recording, use, transfer and voiding/deleting of various inventory items used in the DMV customer service	Custom-built – Agency only
DMV.	Supply Chain Management	PIPS Inventory Update: This is a CSCNet application function that organizes and transmits inventory data from the CSCNet application at all the DMV customer service centers to the PIPS (Oracle) Inventory application; data on license plates, title document	Custom-built – Agency only
DGS.	Supply Chain Management	eVA - (DGS supported Systems including websites and Interface Message Broker)	Custom-built – State wide
DGS.	Supply Chain Management	eVA - eProcurement for state and local government (numbers include user administration for vendors and buyers)	Commercial package – State wide
DGS.	Supply Chain Management	Federal Surplus-Fed Surp	Custom-built – Agency only
DGS.	Supply Chain Management	Uniteq WMS21	Commercial package – Agency only
DMHMRSAS.	Supply Chain Management	QS1-Pharmacy	Commercial package – State wide
DMV.	Supply Chain Management	PLADOS - Plate and decal ordering system. Tracks plate and decal consignment orders.	Custom-built – Agency only
DRS/WWRC	Supply Chain Management	IT asset tracking (characteristics of IT related devices)	Custom-built – Agency only
DVS.	Supply Chain Management	Achieve-Medical-VA.Veterans Care Center	Commercial package – Agency only
DVS.	Supply Chain Management	Genisus-Billing-Va.Veterans Care Center	Commercial package – Agency only
DVS.	Supply Chain Management	Ivans-Medicaid-VA.Veterans Care Center	Commercial package – Agency only
DVS.	Supply Chain Management	Mealtracker-Dietary-Va.Veterans Care Center	Commercial package – Agency only
DVS.	Supply Chain Management	Q/S1-Pharmacy-Va.Veterans Care Center	Commercial package – Agency only
VADOC.	Supply Chain Management	SyteLine ERP	Commercial package – Agency only
VDOT.	Supply Chain Management	Asset Management System (AMS)	Custom-built – Agency only
VDOT.	Supply Chain Management	Automated Fuel Management Program (AFMP)	Commercial package – Agency only
VDOT.	Supply Chain Management	Integrated Six Year Program (iSYP)	Custom-built – Agency only
VDOT.	Supply Chain Management	PaRTS	Custom-built – Agency only
VEC.	Supply Chain Management	VITA Monthly Telecommunications Bill Cost Allocation - used to prepare cost allocation transactions to be fed to the SESA system.	Custom-built – Agency only
VITA.	Supply Chain Management	Contract Management Systems	Custom-built – Agency only
VITA.	Supply Chain Management	eVA Interface	Custom-built – Agency only
VITA.	Supply Chain Management	VIPER (Vendor Invoice Payment Rec.)	Custom-built – Agency only

Types of Maintenance Activities

The Commonwealth Partners will implement SEI CMMI Level 3 processes to be used for all of the maintenance activities. The Commonwealth Partners processes will support all required maintenance activities. These activities fall into three major categories:

1. **Minor enhancements** which consists of the adding or removal of function from an existing solution such as migration to a new application platform, adding new interfaces or redesigning the database. These will be supported by the enhancements component of the Commonwealth Partners' Global Services Method. The Commonwealth Partners will work with the Commonwealth to define the criteria to be used in categorizing a service request as a minor enhancement. Using the Change Management process, the Commonwealth approves all service requests in writing prior to commencement of work. The Commonwealth Partners' approach to minor enhancements includes the following work activities:

   - Reviewing the requirements with Commonwealth business customers
   - Obtaining the Commonwealth's approval of the requirements
   - Estimating the effort required
   - Determining the impact on system performance and batch schedule, if appropriate
   - Developing the solution design and scope, based on requirements
   - Obtaining the Commonwealth's approval and prioritization of the project
   - Developing and changing code or configuration based on agreed-to design
   - Performing testing as defined during the development of the testing guidelines
   - Completing program documentation
   - Obtaining user acceptance from Commonwealth business customers
   - Creating or modifying user training materials, as required
   - Training Commonwealth business users, as required
   - Promoting the code from test into production

2. **Maintenance** which is made up of three different types of maintenance:

   - **Corrective maintenance** is changes made to application code in support of new or changed system software and defects in function or processing such as abends, incorrect or missing data, screen and report formatting errors, incorrect calculations and incorrect processing sequence. The Commonwealth Partners will institute its Problem Management processes to address corrective maintenance. The Problem management process provides mechanisms to track problem trends across applications and help drive the preventative maintenance initiatives. As shown in the due diligence process, the Commonwealth's Help Desk is the primary interface with its business users, they receive the business user's calls, document them and assign them to the appropriate owners for follow-up. The Commonwealth Partners' approach to corrective maintenance includes the following work activities:

     - Support defined prioritization through severity classifications

- Provide coordination with other groups including Third Party vendors
- Generate work products such as the Emergency Fix Analysis and the Problem Log
- Manage tracking and aging of problems
- Generate measurements such as trending reports
- Provide timely communication with Commonwealth's business users

- **Preventative Maintenance** is team initiated changes, not specifically required by the Commonwealth for business reasons but to avert foreseeable problems made obvious by Help Desk trends, to improve performance, quality, reliability, efficiency, usability or maintainability of an existing application. The Commonwealth Partners utilize a preventative maintenance approach for these activities.

- **Adaptive Maintenance** is all tasks related to changing application components to maintain existing functionality in a new operation environment such as new reports or changes to existing reports or screen displays. This includes planning and updating third party software such as PeopleSoft and Oracle. These changes are approved by the Commonwealth through the Change Management process.

3. **General Maintenance** activities are work to provide:

- Application support such as answering questions, correcting data when no client edit facility exists, rerunning jobs and restoring files required to correct user error

- Consulting support for the Commonwealth to support changes to their business processes

- Requirements support to support areas relating to service request estimation, impact analysis and feasibility studies, as well as change request analysis.

Legacy Application Maintenance Operations

For managing the Commonwealth's enterprise applications services environment, the Commonwealth Partners will work with Commonwealth staff to establish operations management, planning, and control processes and procedures to meet the functional requirements. The Commonwealth Partners will work closely with the Commonwealth to adapt these processes and procedures to the Commonwealth's environment. Our primary objective is to maintain a stable enterprise application portfolio environment while meeting or exceeding the required levels of service.

As shown by the due diligence process, the Commonwealth's infrastructure support staff is an integral part of the overall process by providing the necessary support for the enterprise application operations environment. This infrastructure support staff evaluates, recommends, installs, and maintains all systems and application software. Their support includes upgrades to the software platforms, new product installations, releases, maintenance, and base customizations. The Commonwealth Partners' enterprise applications programming staff work with the Commonwealth's infrastructure support staff to communicate the effect and impact of system software changes and updates. The Commonwealth Partners will follow the

Commonwealth's Change Approval Process prior to introducing a change into the integrated testing or production environment.

The Commonwealth Partners will, in the form and scope agreed upon by both parties, create and maintain operational documentation for the in-scope enterprise applications portfolio. This documentation consists of startup, backup, recovery and operational procedures. The Commonwealth Partners will update the operational documentation to reflect the changes made in applications and/or operating procedures as part of the implementation process.

The Commonwealth Partners will work with the Commonwealth to develop a set of operations reports that meet the functional requirements. As a starting point, we will provide reporting structures that have been successfully implemented and validated on other engagements and customize them to provide the appropriate reporting for the Commonwealth, including on-line reports and graphical representation. Metrics related to performance, utilization and status are collected throughout the delivery cycle and are available for reporting on a periodic basis.

Based on our experience with the Commonwealth during Due Diligence, Table 3-98 shows the most likely reports that will be provided to the Commonwealth.

Table 3-98: Reports Provided by Commonwealth

No.	Report Title	Frequency and Timing	Commencement Date for Reporting
1.	Project Plan	Monthly	Effective Date
2.	Monthly Status Report	Monthly	Effective Date
3.	Quarterly Project In Process Report	Quarterly	Effective Date
4.	End User Acceptance Report	On a Project Basis	Effective Date
5.	Application Inventory	Monthly	Effective Date

Application Support Levels

The Commonwealth Partners will utilize the Commonwealth Help Desk currently used in today's environment for identification and processing of Level 1 issues for all in-scope applications, except for activity associated with the Problem Management process linked with production problems initiated by the Commonwealth's Infrastructure Operations group. Level 2/Level 3 activity will be initiated with the routing of the Help ticket to the appropriate area of responsibility. The details of the reporting and escalation intervals will be established as part of the Service Level process.

In support of the Commonwealth Help Desk, we will provide training and documentation to enable resolution of most Level 1 issues for applications without requiring a transfer to Level 2/Level 3 support. The documentation will include Authorized User documentation and documentation related to typical requests that may come from the user community or that past experience has indicated is a recurring request. The documentation will be updated, if required, prior to production installation of any new application or functionality.

The Level 2/Level 3 software support is invoked when the Commonwealth Help Desk Level 1 personnel are unable to resolve the software problem. This support is normally provided by experienced application programmers, the number dependent upon the stability and complexity

of the application. For Third Party software, this may involve contacting the software manufacturer for its expertise and support in order to resolve the software problem. The Commonwealth Partners' relationship with major Third Party software providers helps expedite resolution and workarounds. If there are any incremental costs associated with Level 2/Level 3 support, the Commonwealth Partners seek approval in advance for any financial expenditure.

Process Objectives and Key Performance Indicators

The Commonwealth Partners institute key performance indicators (KPIs) as a measurement of success with all of our clients. KPIs are linked very closely with the main process objectives. In the case of maintenance, the key process objectives on which the Commonwealth Partners will focus are as follows:

1. Reduce cost, while

2. Preserving and enhancing current levels of service.

By bringing the elements of people, process, and performance together within a measurement-driven management framework, the Commonwealth Partners provide the Commonwealth with a vehicle to monitor performance and track improvement. The Commonwealth can achieve a variety of benefits, including:

▪ Application management using fact-based measurements (reduced risk).

▪ Continuous process improvement, driven by fact (reduced labor cost, speed to new service development).

▪ Ability to see trends, both good and bad, so the appropriate actions can be taken proactively (reduced risk).

Table 3-99 shows some sample metrics that have been used by similar size organizations. The Commonwealth Partners would like to collaboratively work with the Commonwealth to finalize and implement the necessary metrics.

Table 3-99: Sample Metrics

Required Service	Performance Standard (PS)	Acceptable Quality Level (AQL)	Surveillance Method
Performance Outcome: 1. Defects that must be repaired by more than one contractor are repaired quickly and seamlessly. 2. Enhancements that must be assessed by more than one contractor are assessed quickly and seamlessly.			
Provide problem management capability that supports coordination of defects	PS1) Average Defect Repair Time by severity and application criticality (critical and non-critical) for defects repaired	<= first 6 months average (beginning with onset of data collection) for all applications by application criticality	Commonwealth Help Desk Tool trouble ticket reports
Provide a change management capability that supports coordination of defects	PS2) Average Enhancement Assessment Time for Enhancements assessed	<= first 6 months average assessment time of coordinated assessments.	Change Management reports on applicable enhancement requests.

| Required Service	Performance Standard (PS)	Acceptable Quality Level (AQL)	Surveillance Method
Performance Outcome: 3. Accurate capacity utilization forecasts are provided to the infrastructure contractor.			
Provide application capacity utilization forecasts	PS3) % deviation of end-of-quarter measurements from previous end-of-year forecast.	+ or – 10% accuracy	Application utilization measurement tools applied to changed applications prior to deployment for applications deployed in the quarter. First annual forecast is end-of-year 2006.
Performance Outcome: 4. End users are satisfied with maintenance service. 5. Minimum process improvement maturity is in place.			
Provide Level 2 and 3 support for end-users	PS4) A 5 point scale on a customer satisfaction survey	A score >= 4	Semi-annual Surveys beginning end-of year 2006.
Project performs at CMMI® level 3 maturity	PS5) Date when CMMI® level 3 readiness is achieved for the specific CMMI® KPAs which have been agreed to.	CMMI® level 3 readiness is achieved 12 months after the completion of transition.	Gap Closure Plan Status Report indicates completion of gap closure.
Performance Outcome: 6. Schedule progress is clearly understood enabling effective management			
Report on project schedule	PS6) Actual to planned schedule estimating ratio	+ or – 10% accuracy	Monthly status reports on project schedule
Performance Outcome: 7. Applications and maintenance continues without degradation in defect rate during transition and afterward. 8. Applications and maintenance continues without degradation in service during transition and afterward.			
Deploy fixes and enhancements during transition	PS7) Production defects found per KLOC developed or modified	< 2 Severity 1 defects per KLOC	Change Management reports
Repair defects responsively during transition	PS8) Average defect repair time by severity (1 and 2) and application criticality (critical and non-critical)	<= 100% of averages existing before start of transition	Commonwealth Help Desk trouble ticket reports
Performance Outcome: 9. Redundant applications are consolidated and retired.			
Retire applications	PS9) Number of applications retired by each contract year-end	100% of those identified in the project schedule for retirement by each year-end	Year-end status report on schedule from project scheduling tool
Performance Outcome: 10. A working process is in place for making ongoing application abide by higher standards in the areas of operability, interoperability, accessibility, ease of use, management, and control.			
Maintain and enhance applications to meet higher standards	PS10) Number of changes identified and assessed for reasons of operability, interoperability, accessibility, ease of use, management, and control per quarter.	5 changes (5% of annual maintenance changes in model)	Reports on assessed enhancements of these types

Required Service	Performance Standard (PS)	Acceptable Quality Level (AQL)	Surveillance Method
Performance Outcome:			
11. Applications and maintenance continues without degradation in service during transition.			
Repair defects	PS11) Average defect repair time by severity (1 and 2) and application criticality (critical and non-critical)	<= first 6 months average (beginning with onset of data collection) for all applications by application criticality	Commonwealth Help Desk trouble ticket reports

Integration Points with Other Processes

The Commonwealth Partners' Enterprise Application Maintenance delivery for the Commonwealth will be based on the utilization of the Commonwealth Partners' multi-tiered, integrated approach to supporting enterprise application maintenance. This allows the Commonwealth to take advantage of a combination of the communication benefits of on-site project team members as well as the resource flexibility of performing work in a shared resource center. The responsibilities of the teams are described as follows:

▪ **Commonwealth** – The Commonwealth's team will manage the overall program as well as acting as a liaison to the Commonwealth agencies. Functions will include the definition of business requirements, high level design approvals, coordination of acceptance testing, and management of schedules, working with the Commonwealth Partners on-site team. We will also look to the Commonwealth to review and sign off on all deliverables

▪ **Commonwealth Partners On-site Team** – The Commonwealth Partners on-site team will be located in Commonwealth sites in Richmond, Virginia. This team will consist of employees hired from the Commonwealth, the Commonwealth Partners heritage employees and project office personnel. The team will work with the Commonwealth to implement and manage the demand management process. They will also provide enterprise application subject matter expertise; external and high level enterprise application design, and problem resolution, and serve as the point of interface for Commonwealth business analysts or, potentially, end users for some applications. The on-site team will be lead by the Commonwealth Partners Enterprise Application Manager, who will manage the overall Legacy Enterprise Application Maintenance effort.

▪ **Commonwealth Partners Off-site Team** – The Commonwealth Partners off-site team will consist of Commonwealth Partners personnel based in Virginia. The Commonwealth Partners will have dedicated resources assigned to the Commonwealth in a dedicated Commonwealth workspace. These resources will have participated throughout knowledge transfer to understand specific enterprise application maintenance requirements. These resources will interface with the Commonwealth Partners on-site team on at least a daily basis. They will perform internal, lower level design tasks, programming and unit testing, problem resolution where necessary, production support, estimating, and defect support under a common methodology that is shared throughout the Commonwealth Enterprise Application Services organization. Project management and coordination will occur on an on-going basis with the Commonwealth Partners on-site team.

Figure 3-56: Commonwealth Partners' Delivery Model Team Roles and Responsibilities
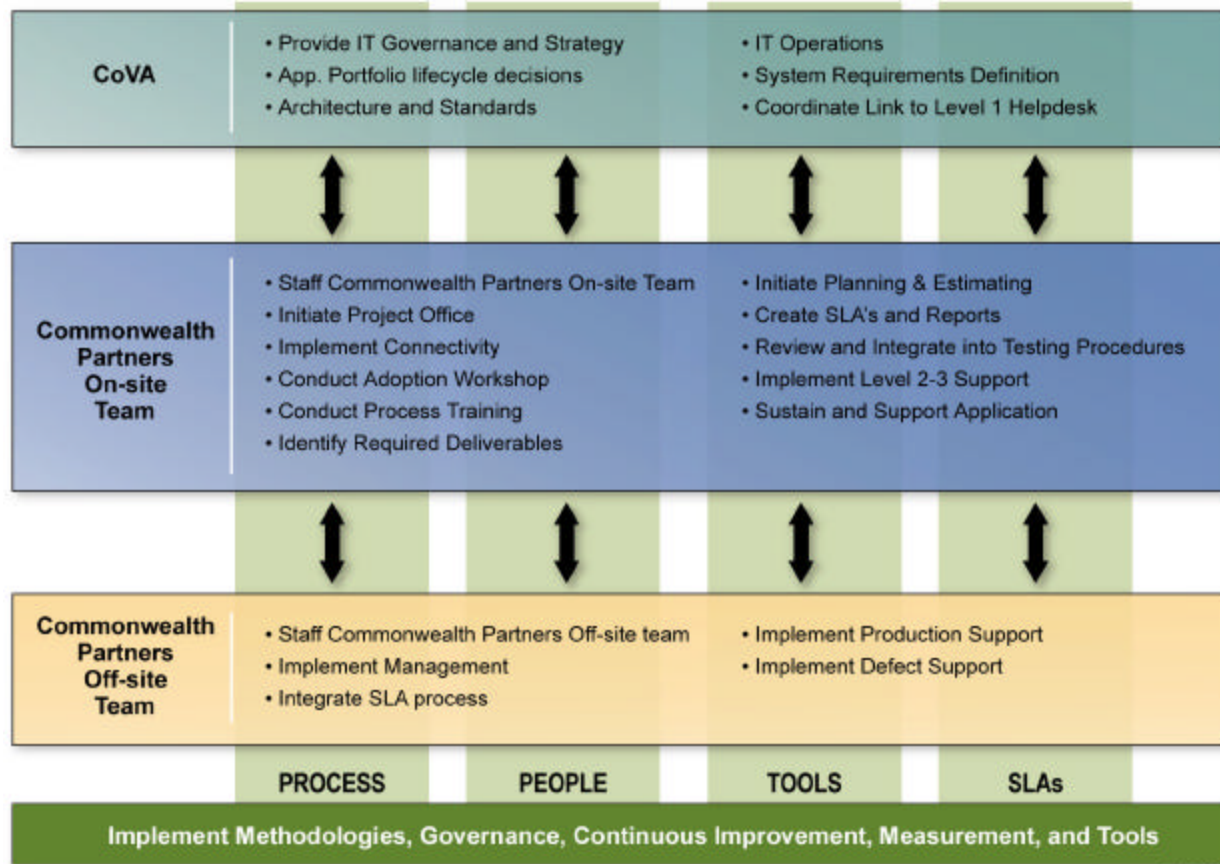
Organization Impact Considerations

In order to ensure minimal interruption of service, the Commonwealth Partners intend to offer employment to all Commonwealth employees currently identified during the Due Diligence process as performing enterprise application maintenance tasks. The Commonwealth Partners intend to use its proven Transition Methodology to transition the employees and the enterprise application maintenance work as smoothly as possible.

The objective of Transition is to move management of work from the Commonwealth to the Commonwealth Partners while maintaining a steady state of service delivery for all of the Commonwealth's business customers. The Transition is performed using the Commonwealth Partners' Application Management Services (AMS) Transition and Transformation Methodology, which represents the accumulated best practices of the Commonwealth Partners in providing Transitions/Transformations in its many worldwide engagements over several years. The Commonwealth will benefit from this proven step-by-step approach which enables non-disruptive services and smooth transition of people and in-scope work.

Although a detailed transition plan will be developed as the first step upon start of service, Table 3-100 shows some high level milestones, assuming a contract start date of December 1st, 2005.

Table 3-100: High Level Milestones

Milestones	Completion Criteria	Planned Completion Date
Contract Start		12-1-05
Assign an experienced AMO Transition Manager	An experienced AMO Transition Manager is assigned	10-15-05
Create detailed maintenance transition project plan document and schedule	The baseline project plan schedule is complete. All identified resources (staff and budget) are committed. The Transition manager is in place.	11-17-05
Conduct a transition planning workshop with the Commonwealth	The planned agenda items are completed during the workshop. The detailed Commonwealth Transition Plan is complete. The detailed Commonwealth Communication Plan is complete.	11-17-05
Implement Solution for Service Request Management E-Requester Tool	All work performed by the AMO delivery team is associated with a documented, prioritized (Commonwealth/Commonwealth Partners), and Commonwealth approved service request. Existing service requests are reported and reviewed on a regular basis. AMO delivery team does not begin work on a request without documented approval from a Commonwealth representative and an authorized Commonwealth charge code. The defined deliverables are approved	12-18-05
Implement solution for Time Accounting (Labor Claiming)	The reporting cycle is stable and meets the defined requirements The deliverables are approved.	12-18-05
Implement AMO P3 Metrics Framework	A cycle of SLA/SLO measurements has been collected and reported. A cycle of basic management reports has been collected and reported. The Claim/Utilization Reporting tool (Claim Data Mining Tool) is deployed. The Metrics Management Framework Essbase Repository is deployed.	1-31-06
Prepare procedures manual for customer	A sign off of the defined deliverables is received from the Commonwealth and Commonwealth Partners program managers.	To be determined based on detailed project plan
Implement a solution for Production Change Management	All maintenance changes to production are documented and approved prior to installation All non-emergency, maintenance changes are reviewed in next Software Production Change Review Board meeting Software Production Change Control meetings are held on a regular basis and each stakeholder is represented The defined deliverables have been approved	12-19-05
Implement a solution for Problem Management	All maintenance problems (those that impact SLAs) are documented, communicated, and coordinated After verification that the defined deliverables have been accepted and approved.	12-19-05
Create Day-1 Plan	The "Day 1 Plan" responsibilities are assigned and assignments are complete.	11-01-05
Obtain Connectivity to the Commonwealth Partners' internal Network	All new Commonwealth Partners employees and subcontractors have appropriate connectivity to Commonwealth Partners from the Commonwealth's site.	12-31-05

Milestones	Completion Criteria	Planned Completion Date
Develop an Organizational Communication Plan	The Communication Plan is owned and implemented, the Plan is approved by Project Executive and communications are performed according to the plan	12-15-05
Develop the cultural transition communication plan	The communication plan is complete and approved by senior management, key resources have agreed to participate and the communication plan introduction has been distributed.	11-15-05
Transition Complete		To be determined based on detailed project plan

Human Resources Overview and Approach

The Commonwealth Partners' proposal is to create a shared services center for application maintenance and to transition the Commonwealth's maintenance employees to become the first employees in this center. We understand that every element of an outsourcing alliance is important -- from our technical solution through final contract delivery. But it's the people who make those business and technical solutions work. People are the most valuable resource in today's on demand environment. That is why we've placed so much emphasis on integrating people in our outsourcing alliances. We understand that retaining the agencies' maintenance staff and their knowledge of the Commonwealth's business is critical to a successful services relationship. We believe it is imperative that the Commonwealth's people are treated with respect and remain in an environment of stability and growth.

The Commonwealth Partners have a strong commitment to acquire, retain, and develop the Commonwealth's IT professionals in support of the Enterprise Application Program. We will offer each maintenance employee a position within our organization that is commensurate with his or her current role, experience, and compensation package.

We believe the components of our offer will encourage more maintenance employees to accept our offer, which will mitigate risk while providing us an opportunity to convince them, first hand, that our respective organizations are ones where they can grow technically, professionally and personally. We are confident that we can provide a culture where the Commonwealth's maintenance employees will not only feel comfortable, but can also excel and thrive in long and rewarding IT careers.

Providing competitive employment is one factor in attracting the maintenance employees to join our respective organizations. Equally important is to have consistent and substantive communications throughout the entire process. We acknowledge the decision to accept an offer with another company involves significant change which introduces varying degrees of stress for the Commonwealth's people. We'd like to partner with the Commonwealth to develop an integrated communications strategy which we believe is an essential component of achieving a successful and smooth human resources transition. In addition, we intend to provide all transitioned employees with significant training opportunities, so that they are equipped to

support the Commonwealth's new enterprise applications and so that they have the opportunity to continue to grow their career in IT.

IBM and BearingPoint have received numerous accounts of external recognition which demonstrate our commitment to our employees and contributes to our both being an employer of choice. Below are a few examples of such achievements:

IBM

- #1 Most Admired Computer Company – *Fortune Magazine, 2005*
- #1 in Training Top 100 – Training Magazine, 2005 and 2004
- Best Outsource Provider – *Waters Magazine, 2004*
- Consulting and Service Delivery Excellence – *Editor's Choice Award, e-Manufacturing, 2004*
- Top 10 Companies for Working Mothers – *Working Mother Magazine, 1987 – 2004*
- Top 50 Companies for Diversity – *Diversity Inc., 2004*
- Employer of Choice – National Society of Black Engineers, 2004
- Best Human Resources Organization – *American Business Awards, 2003*
- Pinnacle Award for Innovative Health Plans – Consumer-Directed Health Care Conference, 2003
- Assimilation of Acquired Employees – American Society for Training and Development, 2003

BearingPoint

- #5 Most Admired Computer and Data Services Company – *Fortune Magazine, 2005*
- Medal of Achievement in Government and Non-Profit Organizations – Computerworld, 2005 (Received for collaboration with Virginia Dept of Transportation)
- First Annual Mentor-Protégé Team Award – *Department of Homeland Security, 2005*
- Top 100 Federal Prime Contractors – Washington Technology Magazine, 2004
- Who's Who in State and Local Systems Integrators – *Washington Technology Magazine, 2004*
- Best First Steps in Outsourcing – Editor's Choice Award, Outsourcing Center/Forbes, 2003

In summary, we are excited about the opportunity of developing a long-term relationship with the Commonwealth and assisting you to achieve your business goals, while protecting your respect for the individual employees. We firmly believe that through working closely with you and your skilled people we can enhance the technological capabilities of the Commonwealth, while also providing new and challenging career opportunities for the maintenance employees of the Commonwealth of Virginia.

Impact on Existing Policies and Procedures

The largest impact on existing policies and procedures will be on how work can be prioritized. As found during due diligence, the current Enterprise Application maintenance activities are prioritized by each individual agency and are constrained by their own resources and budgets. The policies and procedures of a centralized enterprise application maintenance organization allow for access to all resources with similar skills as needs arise. In other words, the new policies and procedures provide for the management of peaks and valleys in work. This will allow more work to be accomplished by fewer enterprise application maintenance employees, which allows for these employees to be redeployed on new implementation projects or on maintenance of other mission critical systems.

Other Risks

A risk associated with the Commonwealth Partners assuming responsibility for enterprise application maintenance is whether the Commonwealth can absorb the amount of change required.

Specifically, since the assumption of application maintenance includes the transition of employees from the Commonwealth to the Commonwealth Partners, cultural transformation is the most applicable for discussion here as a significant risk.

Cultural transformation will occur immediately upon beginning service. During this phase the transition team will focus on the cultural change activities related to people. These activities will assimilate newly acquired staff into the Commonwealth Partners. As part of this phase the Commonwealth Partners will introduce the new employees to the Commonwealth Partners' HR-related processes and procedures, using multiple media to ease the assimilation of the new staff into the Commonwealth Partners culture. The transition team assists in implementing the Commonwealth Partners' Professional Development (PD) program to establish performance plans, skill assessments and career development plans for each new Commonwealth Partners employee. Presentations to the new team cover topics such as an overview of the contract, an introduction to transition and service delivery, and business objectives.

By accounting for cultural transformation using a proven methodology, the Commonwealth Partners will enable a smooth transition from the Commonwealth enterprise application maintenance organization structure to the new Commonwealth Partners delivery organization, without impacting the Commonwealth's business.

In addition, the cultural transformation will bring the following value to the Commonwealth:

- Establishes overall management of all transition activities
- Resolves any initial skill gaps arising from attrition
- Implements a service-based business approach
- Prepares, plans, executes and completes transition, as soon as possible
- Stabilizes work efforts

- Establishes baselines and measurements for control and visibility (performance, quality and cost)

- Effectively turns over all work products from both engagement-to-transition and transition-to-transformation

- Effectively sponsors and plans a cultural transformation project

- Enables in-progress projects to continue without negative impact to cost, scope or schedule

Improvements, Strengths, and Weaknesses Relative to As-Is Process, Including Best Practices

The benefits outlined in the Legacy Support Overview of this section require that the Commonwealth Partners incorporate best practices and optimize the enterprise application maintenance services the Commonwealth provides to its constituents. Below is a further description of the best practices used to achieve these benefits.

The As-Is process for application maintenance results in a fragmented and sub-optimized use of enterprise application maintenance processes and resources due to its decentralized nature. When multiple organizations perform the same activity in different ways, there is limited ability to gain economies of scale and efficiencies across the organization. In addition, there are dissimilar process standards that are not adhered to from a SEI CMMI perspective; therefore, there are no ways to effectively measure the efficiencies of the processes. By consolidating enterprise application maintenance activities and processes, the Commonwealth is able to accurately monitor and measure the efficiency and effectiveness of their enterprise application maintenance organization.

The Commonwealth Partners' enterprise application management services organization will implement the recently accepted Software Engineering Institute's Capability Maturity Model Integration (SEI CMMI®) System Engineering/Software (SE/SW) Staged framework – a framework that consists of best practices for enterprise application maintenance. The Commonwealth Partners will leverage its world-class project management and software development life cycle methodologies and its worldwide experience with successful implementations to achieve conformance with CMMI® Level 3 requirements at the Commonwealth. Industry-wide data demonstrates that implementing Level 3 compliant processes contributes to significant productivity and quality improvements, including reductions in the cost to find and fix defects, decreasing the time needed to complete tasks, increasing the predictability of meeting schedules, and reducing the number of defects.

When embarking on the road to greater process maturity, a key challenge that enterprise application development and maintenance organizations face is balancing rapid implementation of process improvement goals with the ability of the organization to absorb change. The Commonwealth Partners' proven Transformation Methodology provides a streamlined, efficient approach, which enables successful process implementations with well planned strategies, to help the organization adjust to change.

The Commonwealth Partners will implement its step-by-step approach to process improvement at the Commonwealth. This approach consists of the following four phases - Plan, Prepare and Train, Implement and Institutionalize, and Appraise – as described below:

- Plan

  - The Commonwealth Partners perform an initial project review to identify constraints, set the scope of the organization and verify assumptions gathered before contract start.

  - The Commonwealth Partners develop a project charter and a detailed Microsoft Project schedule to implement Process Transformation.

  - The Commonwealth Partners enlist the project management office to establish the implementation of consistent processes across the Commonwealth, and a process-change management capability to drive the execution of the process improvement plan.

- Prepare and Train

  - The project management office, with assistance from experts in the Application Management Services Centers of Competency, reviews and makes minimum updates to the processes that are needed to satisfy the SEI CMMI® Level 3 requirements and to implement the Commonwealth Partners' Application Management Services Management System.

  - The Commonwealth Partners train members of the application development and maintenance organization that are responsible for executing processes.

- Implement and Institutionalize

  - The project management office implements the procedures across the organization in a controlled manner to enable the practitioners to absorb changes and to have no impact on service levels for the Commonwealth's business.

  - The Commonwealth Partners collect evidence resulting from the execution of the improved processes. This practice demonstrates that the improved processes have been institutionalized into the organization's day-to-day operations.

  - Appraise

  - The Commonwealth Partners will conduct periodic, planned checkpoint reviews to assess the progress of software process-improvement efforts. The Commonwealth Partners' Application Management Services Center of Competency will perform an independent evaluation of the account's training and quality management processes.

In conclusion, the Commonwealth Partners propose to assume responsibility for all Enterprise Application maintenance activity currently performed by the Commonwealth. This assumption of the Commonwealth's Enterprise Applications will provide three key changes to their current environment:

1. The Commonwealth Partners will centralize the maintenance of the Enterprise Applications while hiring the current maintenance support employees.

2. The Commonwealth Partners will implement a package of state-of-the-art processes based on Industry best practices which will provide the Commonwealth with the opportunity for improvement of the overall quality of the Application Maintenance process thus reducing the number of defects seen by the end users.

3. The Commonwealth Partners will implement a process for performing the upgrades of the PeopleSoft and Oracle software as required.

3.5.2 To-Be Process Definition for Enterprise Application Integration

Introduction -

During the Enterprise Applications due diligence process, information was collected about all enterprise applications in 46 of the Commonwealth's agencies. In those 46 agencies, there are a total of 252 distinct applications, almost none of which are integrated with each other, neither directly, nor through any type of centralized enterprise architecture. Achieving the business process improvement objectives of the Enterprise Applications projects is dependent on a robust and flexible infrastructure that will enable the Commonwealth to maintain, modify, and add new business applications, **whether those applications are included in the proposed set of Enterprise Applications projects or are part of future projects not yet contemplated.** Without the proper infrastructure, attempts to re-engineer processes will realize costly overruns due to technical problems. Reliability issues, poor performance, security violations, silo applications that cannot communicate with other systems and other issues will prevent the re-engineering process from achieving success. The current state of the infrastructure is illustrated in Figure 3-57 as four functional areas with the agencies bounded within each of the areas.

Figure 3-57: Current State of Four Functional Areas
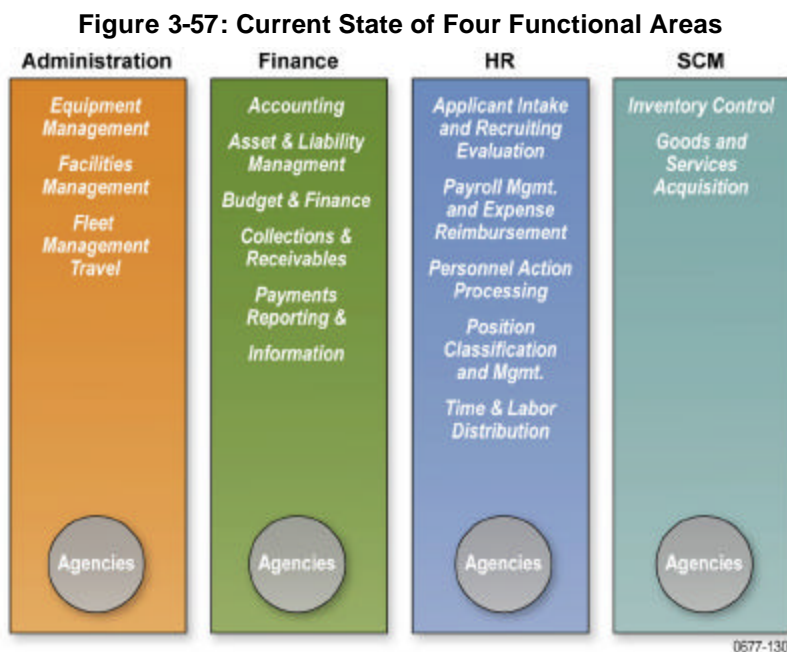
The four functional areas behave as silos with agencies having several organizations in each silo that do not communicate across functional areas. The problem with the current IT infrastructure

is it lacks the necessary support for communication between the functional areas and to cross agency boundaries.

To alleviate this, a component will be designed and built called the ESB (Enterprise Service Bus). The ESB is not a single product or a group of products, but it is an architectural construct that establishes the design guidelines of this component.

The ESB enables communication across functional areas and agency boundaries. Business processes are improved by the ESB by exposing business and system services across the Commonwealth. The utilization of these services, as would be evident in different agencies' processes and maturity of the infrastructure, can be direct, or can be mediated through the ESB, an intelligent infrastructure. The business processes may be invocations of service, services being consumed by systems within the Commonwealth infrastructure, or consumption of services provided by external applications like the VFA.

The ESB allows business processes to communicate and be choreographed to complete a business activity. An example of a simple process is the maintenance of a Fleet vehicle. One business process is the actual work performed to maintain the vehicle. However, the ordering of parts, tracking of labor, manufacturer recalls, and others are separate business processes that are currently weaknesses identified in Section 2 of this document. These processes need to be choreographed with each other in order to improve the overall Fleet Maintenance process.

Figure 3-58: Enterprise Service Bus architecture choreographs separate business functions
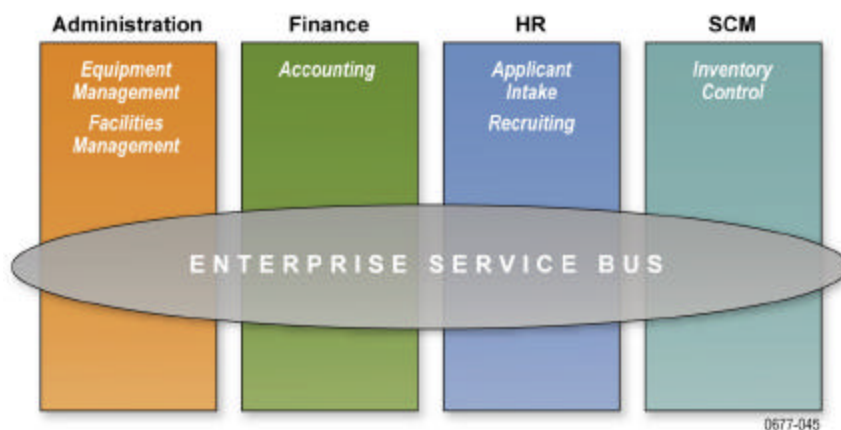
The ESB enables the flow of information between the functional towers. For example, if a new supplier is added to the procurement system, information about the supplier can now flow to the Finance and Administration areas where the supplier information will update systems.

Figure 3-59: Enterprise Service Bus Facilitates Communications Among Systems
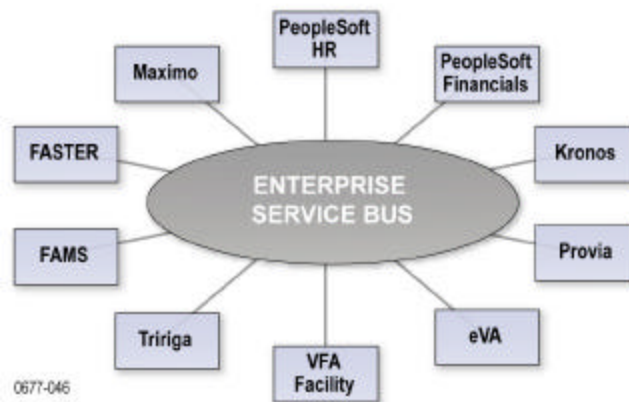
Applications will be connected to the ESB to allow communication between systems. The ESB breaks down the barriers between agencies by facilitating the flow of information across the enterprise. Not only is information more accessible between agencies, but entire business processes may be choreographed to complete a business process that may span multiple agencies and/or functional areas.

The ESB will consist of major components that provide the functionality required to achieve the business process re-engineering activities. The components in the diagram (Process, Portal, ETL, Message Broker, Security, and KPI) provide the functionality behind the services of the ESB. An example of a service would be a procurement service for items over a certain expenditure threshold. Procurement of items over a certain dollar amount could be routed to a different destination that would audit these transactions and apply special processing to these transactions. Different threshold levels could be set by agency and these levels can be changed dynamically by a business analyst without the need for programming changes to the IT systems.

Figure 3-60: Functionality of the Enterprise Service Bus
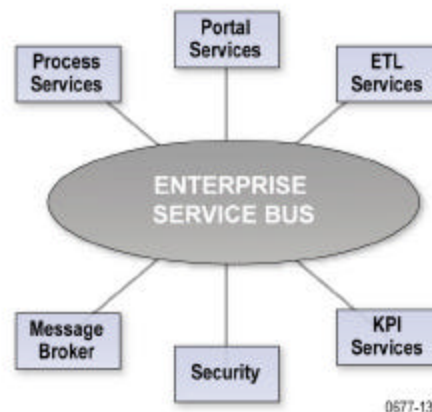
The Process services supplies support for the integration of business processes. Some of the supported features of this service are the following:

- Reliability features that remember the event sequence of a business process in case of an IT failure. The business process will continue processing at the place were the failure occurred in the process

- Events that trigger processes relating to specific business information are kept in order, regardless of when the events "arrive" at the Process Service

- Information from other processes are cross-referenced and indexed to each other

- Business processes have an "undo" feature that allows multiple transactions in a process to roll back and support for other advanced error handling features

- Monitoring of business processes allows for data collection at multiple steps in a process. The data collected can then be used for KPIs

- Security at the business process level can be enforced by several techniques.

- Data transformation.

Some of the supported features of the Portal service are the following:

- By delivering the unique capability of linking business processes with the portal experience via an orchestrated workflow, employees and trading partners can make faster decisions and improve their productivity

- Portal-based content management and personalization so portal users get an unique experience with the latest information

- Document management to improve the currency of portal content and the value of files shared by portal users

- Productivity components to view, create, convert and edit basic documents, spreadsheets and presentation files from with in portal interface

- Powerful collaborative services including instant messaging, team workplaces, and people finder that allow users to quickly make business decisions with other employees, customers and trading partners

- Extended search capabilities to improve the productivity of your employees

- Web analysis features to help measure, report and improve effectiveness and quality of the user experience

Some of the supported features of the Message Broker service are the following:

- Distribute real-time information from disparate sources of information through a network of access points or a centralized broker

- Reduce the number of point-to-point interconnections and simplify application programming

- Powerful publish-and-subscribe matching engine routes information based on topic and content

- Validate and transform messages between different message formats, including Web Services, other XML and non-XML formats

- Route messages based on business rules

- Mediates (provides routing, transformation and logging) between Web Service requesters and providers

- Mediates between Web Services and other integration models as both a service requester and a service provider

Some of the supported features of the Security service are the following:

- Provides application-level data protection
- Provides message-level audit function, and generates audit records that can demonstrate specific compliance with the defined security policy
- Offers centralized administration of both access control and data protection policies across mainframe and distributed servers
- Implements comprehensive security without writing complex security code or modifying or recompiling existing applications
- Role-based User Authentication
- Supports Single-sign-on(SSO)

Some of the supported features of the ETL service are the following:

- Real-time data integration
- Support of high volume bulk data requirements for batch processing.
- Common utilities for sorting, merging, and transforming data

Some of the supported features of the KPI service are the following:

- Information in real-time can be collected and sent to a Web-based dashboard that displays the KPI metrics
- Delivers ongoing business process improvement by constantly sending real-time data back into process modeling tools
- Business and technical users can utilize the tailored alert system to define, display, and receive instant alerts on operational results

Additional services will be added to the ESB as required by the business requirements of the Commonwealth.

The plan is to create architecture for the Commonwealth that will evolve over time both in capacity and functionality. The Commonwealth architecture spans across agency boundaries and supports business processes within the four functional areas; HR, Finance, Supply Chain, and Administration. In addition, the Commonwealth architecture supports business processes that cross functional areas. The Commonwealth architecture will be designed as a service oriented architecture (SOA). Commonwealth Partners is leading the industry in SOA technology and has a proven process, Service Oriented Modeling Architecture (SOMA), to build an enterprise SOA. The Commonwealth SOA will have the following characteristics:

- A set of services that an agency wants to expose to constituents and internal users.
- An **Architectural style** that requires a service provider, requestor and a service description.
- A **set of architectural principles and patterns,** which address characteristics such as modularity, encapsulation, loose coupling, separation of concerns, reuse, composable and single implementation.

- A **programming model** complete with standards, tools, methods and technologies such as web services.

To establish a Commonwealth SOA, a set of principles that cross agency boundaries and encompasses the four functional areas must be established. Setting principles will improve the communication between the functional areas as agencies are building on the same foundation. The principles of the Commonwealth architecture are the following:

- Modularity
- Encapsulation
- Loose coupling and governed by contracts/policies
- Separation of concerns
- Composable
- Single implementation and enterprise-view of components
- Industry standards-based components
- Leverage existing organization's assets wherever an opportunity exists
- Support well-defined and industry supported message schemas and standards
- Compliant with WS-I basic profiles and usage scenarios

These architecture guiding principles define the underlying general rules that govern the agencies of the Commonwealth to utilize and deploy business and IT resources. The result of the adoption of these rules is the following:

- Provide an effective framework that enables conscious decisions to be made about the Commonwealth, its management style and structure, and how it uses and implements the technologies under the SOA approach
- Guides the establishment of relevant evaluation criteria that influence the selection of business partners, components, products and product architectures.
- Serves as an input to assessing both the existing environment, including IT systems, organization, management practices, and the future environment.

The Commonwealth Partners, with the participation of the Commonwealth will use a process named SOMA (Service Oriented Modeling Architecture) to identify what services are built and exposed on the ESB. Each functional area has already identified their old and planned applications. Components will be identified for each application. Some components, especially for legacy systems, will not be good candidates for decomposing into services. These legacy components typically are large, require a large amount of data, and are tightly coupled with other components. For those components that are candidates for services, the services are defined by techniques such as VOA (Variability-Oriented Analysis), Component-based Development, Object Oriented Analysis and Design, and Use Case Modeling. The process is an iterative approach and has both a top-down and a bottoms-up approach. The diagram below illustrates the top-down approach starting with the functional areas and decomposing to the service level. Once

we have identified what services can be built and exposed, we need the Commonwealth to drive the selection process of the services that are actually implemented. Business Process Modeling (BPM) will be used to model the enterprise business processes using automated tools. These tools step through each process and identify where services are required from applications to complete a business flow.

From the top-down and bottoms-up approach we have two result sets of services. Now we must prioritize the services by business need, available KPIs, enterprise goals, and cost of implementation to define the services to be built for the ESB.

Figure 3-61 illustrates how services are defined from analyzing both the existing applications in the functional areas and the business processes.

Figure 3-61: Approach to Prioritize Services
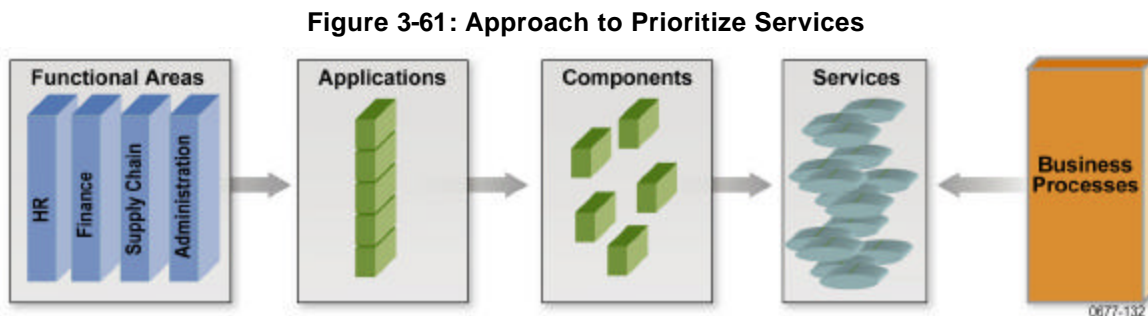
Representatives from the Commonwealth and the Commonwealth Partners will form an SOA governance body. These architecture principles will be adopted by the SOA governance body. and would promote the following goals of the architecture.

- Component reuse
- Insulate the business logic from the underlying technology
- Concept of separation of concerns allowing developers to focus on the business services capabilities, not caching, memory management, component placement, etc.
- Maintainability, sustainability where the components representing the business service can be maintained by other than the developer herself/himself providing much more reusability and flexibility of people
- Efficient use of system resources

The SOA governance body is essential for the Commonwealth Partners in building a flexible infrastructure that will support business process re-engineering. The governance model would focus on the following three attributes for infrastructure management:

- Enforce operational best practices
- Visibility into discrepancies
- Compliance and policy enforcement governance

The "enforcement of operational best practices" includes some key steps: alignment of the organization's IT with the operations and regulations directives; delegated administration; best

practices applied through configuration, not coding, and application security enforcement through policy-driven code implementation patterns.

The visibility into discrepancies is established through process tracking, performance SLAs (Service Level Agreement) and measurements, security visibility and message logging and analysis.

Finally, the compliance and governance policies are established through schema validation against enterprise repository and meta models, conformance of these policies to be consistently applied across the strategic platforms, regulatory and security enforcement, and audit capability. The Commonwealth SOA will be a living and evolving structure serving the constituents of Virginia.

The architecture has to be flexible in order to accommodate changes to the existing business processes and new business processes that are created in the future. Layers are created in the architecture to encapsulate like functional and characteristics of software artifacts (applications, components, services, processes).

Layers help isolate change in the system so that the impact of change is minimized and a change does not cause a ripple effect throughout the architecture. For the SOA architecture, the layers defined are applications, components, services, business process choreography, and the presentation layer. The diagram illustrates that the ESB is the location of the integration of these architectural layers. As the Commonwealth proceeds with re-engineering of its processes, the ESB will serve as the integration layer with the other architectural layers.

Figure 3-62: Architectural Layers Are Integrated Within the Enterprise Service Bus
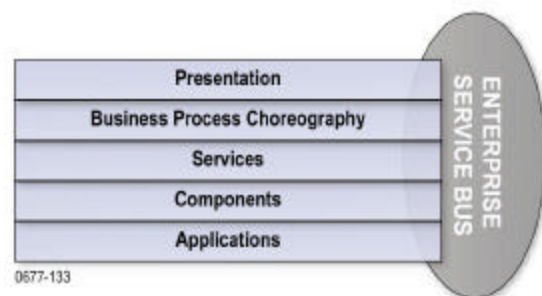
Process Flow Narrative

Inputs and Predecessors

Inputs to the ESB will be information from Commonwealth systems. This information may be in the XML format or Commonwealth proprietary formatted messages. The majority of legacy systems use proprietary messages and therefore ESB will support these formats. A benefit of this support is that the life of these legacy systems may be extended since they are now enabled to communicate with any other system in the Commonwealth through the ESB. One path that these messages may flow is to be routed to existing services on the ESB, such as a transformation service that reformats the message to a readable format for the target application. Alternative routes the messages may take over the infrastructure are to be directly sent to existing APIs of other applications or to APIs of programs which trigger an event in a process flow. Human interactions or system events may be predecessors that initiate the sending of messages to the ESB. Since the inputs are now to the ESB instead of directly to other applications, the high

maintenance costs of maintaining a point-to-point solutions will be reduced as the number of interfaces required by the ESB is less than the point-to-point solutions currently implemented.

Outputs and Successors

Outputs from the ESB will be XML format or Commonwealth proprietary formatted messages that have consumed services on the bus and now the messages are ready to send to their destination Commonwealth systems. Every message on the bus may have been logged and audited according to Commonwealth requirements. Successors to the messages outputting from the ESB may be human interactions or a system event that continues the process flow until the end of the business process. A benefit of messages outputted from the ESB to an application is that changes to the message structure or content are made without impacting other applications that also use the ESB.

Process Owner

The SOA governance body will be the owner of the ESB. Design changes and which processes that use the bus will be determined by the SOA governance body. The ESB is the "owner" in the context of delivering the messages and providing the services requested by the messages flowing on the bus.

Process Orientation (Centralized, Decentralized)

The ESB is a centralized process that allows for access to business processes as they flow through the system. This centralized process orientation provides many benefits over a decentralized environment, which is a point-to-point solution between applications. The bus provides a central location to monitor business processes at the application level. Real time information about critical business processes will be captured at the bus. Agencies will be able to monitor their processes and make process improvements based on usage patterns and other key business indicators.

Process Objectives and Key Performance Indicators (KPIs)

The KPI service provides the facilities required to enable business performance management, i.e., management of business services to meet business goals such as key performance indicators (KPIs) identified in the analysis phase of business service implementation. Services rendering the functional aspects are instrumented to produce business events that can be used to calculate KPIs and other metrics relevant for the management of the underlying business services. In addition, business service policies describe the expected behavior of a business service and eventually define rules dealing with situations where those expectations are not met. The KPI service will produce IT-level events reporting status of resources used by business services that can be correlated to business events produced by those services. Business- and IT-level events are used by service level automation services to enforce the policies associated with the business services they host; utility business services in conjunction with the Enterprise Service Bus can be used to collect, aggregate and evaluate those events for presentation to business process participants in business activity workplaces.

Integration Points

There are 40 integration points currently identified in the four functional areas. The integration points were identified by listing the applications in each of the functional areas and determining which applications exchange information. The majority of the integration points are complex. Some of the interfaces will support a large number of different messages that represent different transactions. The integration point may require an adapter that performs a transformation of the message. Synchronous and asynchronous messages may both be required to be supported. Whenever possible, the strategy for the integration points will be to buy a vendor supported adapter(s). There are adapters available for PeopleSoft and Tririga. The adapters will be configured to work with the ESB to move messages across integration points. In cases where there is no vendor supported adapter available, then a custom adapter supported by Commonwealth Partners will be built and maintained.

Reporting Requirements

The Commonwealth infrastructure supports reporting requirements by maintaining its own data store of application level information on the messages that flow though the ESB. This information may be exported to a report database or the Commonwealth data warehouse where reports may be generated.

Security Considerations

The majority of the messaging traffic will be "trusted" by the bus as the bus resides behind the IT firewalls and the application layer security prevents unwanted or unauthorized messages from getting on the bus. The ESB is the centralized location through which application information will flow and supports a Security service. Encryption, role-based authentication, and Single-Sign-On (SSO) are services that will be supported by the ESB.

Data Conversion Requirements

The ESB provides data conversion and/or data transformation of messages as they flow on the bus. The data conversion may be done real time in order for information to flow between two existing applications. An example would be new employee information that would flow from the new Candidate Gateway and Talent Acquisition Manager applications to PMIS. The data sent from those applications is in a format acceptable to PeopleSoft. The ESB will convert this data to a format that is read by PMIS.

The ESB will also support an ETL service for data conversion of flat files and legacy databases to new data stores. Data conversion can now leverage services supporting ETL on the ESB. Files and extracts from databases may be routed over the ESB to utilize services such as a sorting service, a merge service, or a transformation service. These services are driven by maps created by graphical tools. The advantage of using these services are that the ETL process for a particular data conversion can be configured in some cases without the need for additional programming or low level programming skills.

Organizational Impact Considerations

The ESB will benefit the organization structure of the Commonwealth by creating flexibility in where work is performed. Individual organizations will not have to maintain separate organizations for administrative and reconciliation processes that exist today because of silo agency IT applications and business processes. For example, a common process like bill payment can be administered centrally because the information necessary to perform the business process for agencies will be available over the ESB.

Impact on Existing Policies and Procedures

As new applications come on-line and services are added to the ESB, there will be opportunities to improve existing polices and procedures. Auditing of business processes will be greatly improved with the access to centralized information flow throughout the bus.

Other Risks

A risk is not understanding that establishing an SOA is an evolutionary process. Services are identified, designed, built, and exposed to other applications based on the needs of the Commonwealth. The SOA efforts should parallel the efforts of the application teams as new systems are added to the Commonwealth infrastructure. The new recruiting system is one of the first applications scheduled to be deployed so the SOA would focus first on providing services that are required by or provided by this system

Improvements, Strengths, and Weaknesses Relative to As-Is Process, Including Best Practices

The current integration infrastructure is a myriad of technologies that primarily exchange data between two applications. There are examples of re-keying data between applications. There was little design consideration for business process improvement in the current application integration schemes. The Commonwealth Partners believe that following industry best practices in creating an SOA will support the planned business process improvements.

Efficiency

Exposing reusable services is one way that the Commonwealth infrastructure will be more efficient. PeopleSoft exposes a number of Web Services to other applications. New interfaces will not have to be built every time a new application needs to interface with an existing application. PeopleSoft Web Services and other applications using Web Services will be the providers of the information that the new applications are requesting for a business process. And instead of batch processing and the exchange of flat files, in many instances the data will be near real time information.

Productivity

Business processes are now linked together by the ESB. One example of many is that HR will share information with Payroll over the bus reducing errors and costly rework caused by errors and omissions created by manual, paper-driven processes.

Benefits

Non-financial

- Extend the life of legacy systems by using a service wrapper to expose services to other applications

- Early detection of fraud and abuse of systems

- Enhance the constituent experience by improving services through e-government and process automation

- Increase level of support of security, safety, and privacy

- Business flexibility provided by increased granularity of processes enabled through services

- Ability to quickly create business processes and composite applications to respond to changes in the marketplace

- Improved customer service and ability to rapidly introduce new products and services with an SOA without having to worry about the underlying IT infrastructure

- Becoming a more responsive IT organization with a secure and managed integration environment

- Decrease development and deployment cycle times through the use of pre-built, reusable services building blocks.

Financial

- Reduce administrative costs as self-service applications leverage the infrastructure

- Reducing complexity and maintenance costs with common services

- Reduce development costs of new applications by reusing existing services

In conclusion, the Commonwealth Partners will develop a centralized enterprise architecture to facilitate the integration of all enterprise applications, including both the existing legacy applications and the new applications introduced as a part of this project or any other project upon which the Commonwealth embarks. This architecture will allow the Commonwealth's enterprise applications to truly function across the entire enterprise.

3.5.3 Ongoing Enterprise Application Support

Overview

Upon completion of the implementation of each new Enterprise Application, the Commonwealth Partners Maintenance team will assume maintenance responsibility for that application. A description of the Commonwealth Partners' support and maintenance services has been provided

in Section 3.5.1 - Legacy Support. This section 3.5.3 will detail the transition process of maintaining and supporting the new Enterprise Applications once they have been implemented. This section will also include the benefits to the affected employees and the advantages of the off-site shared-service environment.

One key benefit of the Commonwealth Partners assuming maintenance of the new Enterprise Applications is that Commonwealth Partners will provide for the significant amount of training required to migrate to the new integrated versions of PeopleSoft and Oracle, known as Fusion. The Commonwealth Partners will invest in this training for transitioned maintenance employees in the normal course of business, so that the Commonwealth will not be required to incur this expense. This will further mitigate the normal risk incurred with any major application upgrades.

During the due diligence process, there were three agencies identified as currently using PeopleSoft: the Virginia Department of Transportation (VDOT), the Virginia Information Technologies Agency (VITA) and the Department of General Services (DGS). As part of the Enterprise Application projects, these agencies will be implemented to one Commonwealth instance of PeopleSoft Financials starting with VDOT. Also, there were five agencies identified that are currently using Oracle: the Department of Motor Vehicles (DMV), the Department of Education (DOE), the Department of Medical Assistance Services (DMAS), the Department of Environmental Quality (DEQ) and the Department of Social Services (DSS). These five agencies will be implemented as part of the Enterprise Applications projects to one instance of Oracle. Once these are implemented, the Commonwealth Partners maintenance team, including the transitioned employees, will be trained to assume support and maintenance responsibilities of the upgraded software. This Commonwealth Partners team will be responsible for support after each agency's implementation to the single instance of PeopleSoft, Oracle and eventually the new Fusion product.

The Commonwealth Partners key support and maintenance areas for the new Enterprise Applications are:

- User Support
- Troubleshoot and Resolve Problems
- Minor Enhancements
- Report Enhancements and Support
- System Administration
- Performance Management
- User Profile Management
- Interface Management
- Batch Management
- Software Upgrade Support

The Commonwealth Partners Maintenance team will remain a distributed team, which includes the newly hired COVA employees on-site in Richmond, Virginia locations and employees off-

site at the shared services center. The team is distributed in order to maintain the communication advantages of being close to the users while gaining cost advantages of resource pooling in a shared service center. The distributed maintenance team will be trained on the new Enterprise Applications thus retaining their jobs and obtaining new skills. The Commonwealth Partners and the Commonwealth will gain a unique advantage of retaining highly skilled jobs within the Commonwealth of Virginia.

All of the Commonwealth Partners processes to transition the newly implemented Enterprise Applications to the maintenance environment are geared towards causing no disruption of service for the new Enterprise Applications.
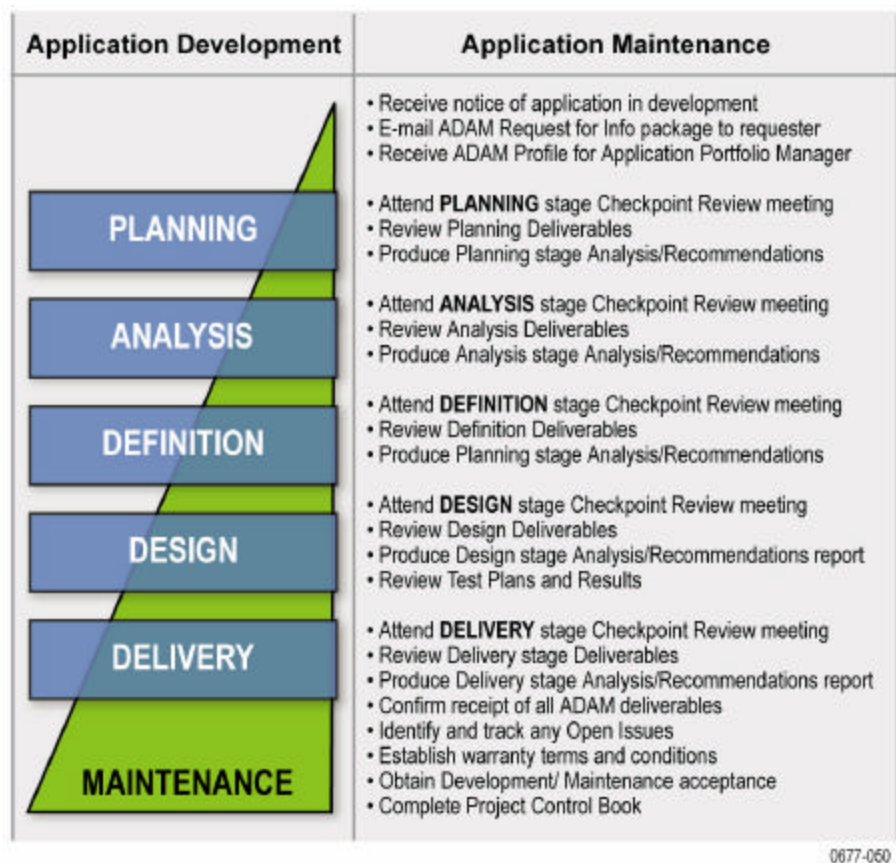
Process Flow Narrative

The Commonwealth Partners will transition each new Enterprise Application from the Implementation Team to the Maintenance Team upon successful implementation of that Application. A knowledge management approach is vital to provide training to facilitate the development of knowledge and skills of the maintenance team on the new Enterprise Applications. Knowledge management focuses on technical knowledge and skills, related to the specific needs of the individuals who will be assigned to the maintenance of the new applications.

Our knowledge management approach provides a structured means for establishing and delivering training to the distributed maintenance team on the maintenance and support activities required for the new applications. Knowledge management activities align with the application development activities so that the maintenance team participates in activities needed to learn and understand the new applications as they are being developed and tested. Throughout the process of design, build, test, and implementation, the maintenance team will be involved.

The Commonwealth Partners recognize the many benefits of early participation of the maintenance team in the development process of new Enterprise Applications being developed. This process describes how the Commonwealth Partners maintenance team participates as a member of the Commonwealth Partners Application Development Team throughout a project. The Maintenance triangle on the following chart shows levels of involvement that increases as the project moves through the development stages until the actual turnover into Maintenance upon acceptance of the final developed and tested production system.

During the development life cycle, the maintenance support team is involved by reviewing initial planning, analysis, definition, and design documentation. The Commonwealth Partners maintenance team becomes fully involved during the delivery phase and accepts the new product into maintenance after a minimum of four weeks of successful production execution with all open problems and issues resolved.

**Figure 3-63: The Commonwealth Partners' Maintenance Team
Participates from Initial Planning of an Application**

Application Development	Application Maintenance
PLANNING	• Receive notice of application in development • E-mail ADAM Request for Info package to requester • Receive ADAM Profile for Application Portfolio Manager • Attend **PLANNING** stage Checkpoint Review meeting • Review Planning Deliverables • Produce Planning stage Analysis/Recommendations
ANALYSIS	• Attend **ANALYSIS** stage Checkpoint Review meeting • Review Analysis Deliverables • Produce Analysis stage Analysis/Recommendations
DEFINITION	• Attend **DEFINITION** stage Checkpoint Review meeting • Review Definition Deliverables • Produce Planning stage Analysis/Recommendations
DESIGN	• Attend **DESIGN** stage Checkpoint Review meeting • Review Design Deliverables • Produce Design stage Analysis/Recommendations report • Review Test Plans and Results
DELIVERY	• Attend **DELIVERY** stage Checkpoint Review meeting • Review Delivery stage Deliverables • Produce Delivery stage Analysis/Recommendations report • Confirm receipt of all ADAM deliverables • Identify and track any Open Issues • Establish warranty terms and conditions • Obtain Development/ Maintenance acceptance • Complete Project Control Book
MAINTENANCE	

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Organizational Impact Considerations

Transition of COVA Employees to Support New Applications

In conjunction with the overall People Transition plan, the transitioned employees will be trained to assume support and maintenance responsibilities as part of the Commonwealth Partners Maintenance Service team. This team will be responsible for supporting each rollout of new Enterprise Applications including the new single instances of PeopleSoft and Oracle. The Commonwealth Partners transition approach would:

- Preserve existing jobs, and also allow the Commonwealth Partners to fill staffing gaps by supplementing with centralized off-site resources with needed skills
- Preserve jobs within the Commonwealth by transitioning former Commonwealth employees from Legacy application maintenance to the new Enterprise Applications maintenance
- Expose former Commonwealth employees to new IT job opportunities, as IBM employees

This arrangement reduces risk by allowing Commonwealth business knowledge to be migrated more efficiently to the new Enterprise Application support team.

Knowledge Transfer

The purpose of Knowledge Transfer is to acquire the necessary knowledge of the new Enterprise Applications' specific processes and requirements for the Commonwealth Partners maintenance team to successfully support the new applications. The process is accomplished through documentation reviews, knowledge transfer workshops and targeted shadowing for critical business processes and applications. The integration of members of the support team within the implementation team as shown in the previous figure greatly improves the knowledge transfer process and will be utilized by the Commonwealth Partners.

This knowledge transfer occurs throughout the transition process. The figure below provides a graphical representation of how the knowledge transfer process will work throughout the activities defined for initiation and transition.

For the Commonwealth Partners maintenance team, these processes will be streamlined to address only whatever knowledge transfer was not captured/completed by support resources that did not participate directly in the implementation of the application.

This process will be used for all PeopleSoft and Oracle implementations including those for the Commonwealth's VDOT, DGS, VITA, DEQ, DMAS, DOE, DSS, and DMV agencies.

Figure 3-64: Knowledge Transfer on New Enterprise Applications
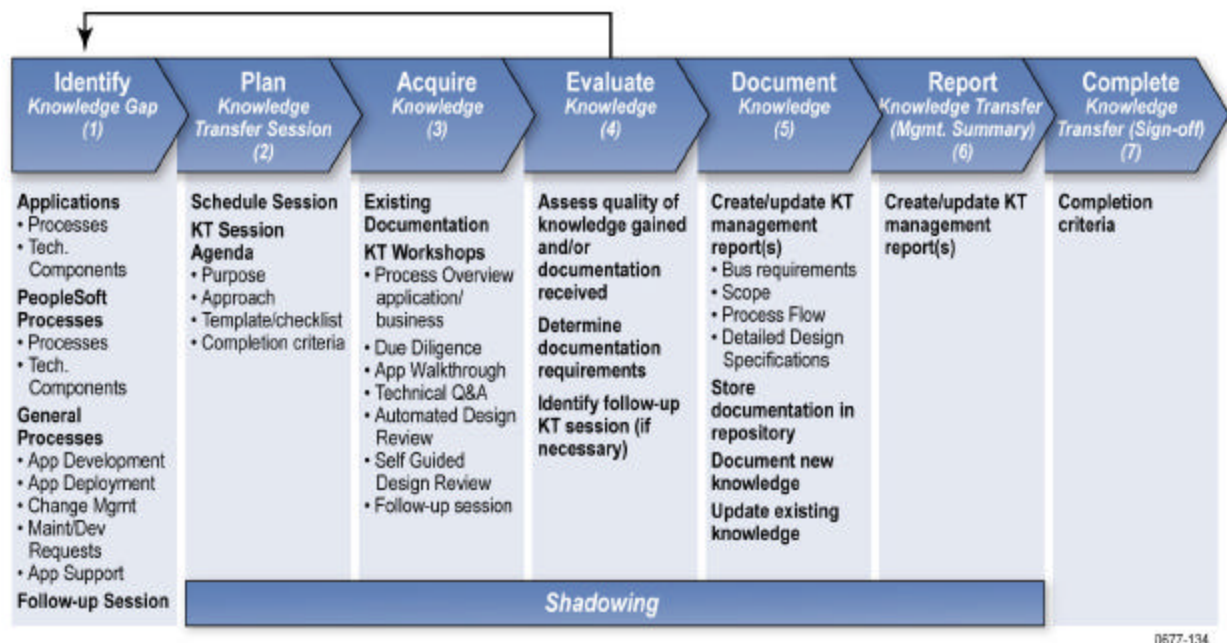
Service Objective Criteria

The Commonwealth Partners will provide the standard service level shown in the following sections at the start of the Maintenance Services period and will review jointly with the Commonwealth after the first 90 to120 days has elapsed after the commencement of new Enterprise Application maintenance services to determine if service levels are appropriate.

IBM's Enterprise Application Solution Center Hours of Operation

The new Enterprise Application maintenance Solution Center will receive Service Incidents from The Commonwealths' Help Desk 24 hours a day, 7 days a week. The Enterprise Application support Consultant(s) will be readily available during the Primary Support hours noted in the table below and will be on call during Secondary Support hours, also noted in Table 3-101.

Table 3-101: Hours of Support

Function/Module Supported	Primary Support Hours (EST)	Secondary Support Hours (EST)
All Enterprise Application Modules included in Scope	8:00 a.m. to 6:00 p.m. Monday through Friday (excluding The Commonwealth's observed holidays)	All Other

- Primary Support provides User Support for Service Incidents of all Severity Levels; and
- Secondary Support provides User Support for Severity Level 1/2 or 3 Service Incidents only, with all other Severity Level Service Incidents logged during the subsequent Primary Support window.
- Pager Support provided for Severity Level 1/2 or 3 Service Incidents during secondary support hours.

Service Incident Severity Level Definitions

The Severity Levels described in the following table will be used to categorize all User Support Service Incidents from The Commonwealth internal help desk. The Severity Level will be assigned initially by The Commonwealth Help Desk and validated by the assigned Enterprise Application support Consultant(s) and/or the Enterprise Application support Manager.

Table 3-102: Severity Levels

Severity Level	Service Incident Characteristics
1	- Service Level Objective missed - Severe impact on client productivity - Severe corruption of data - Requires immediate change
2	- Significant impact on client productivity - Issue directly affects end-user
3	- Significantly reduces system effectiveness - Required for next major processing (such as month-end/quarter-end)
4	- Workaround is available - Several methods to resolve issue

Service Incident Response Times

Service Incidents will be responded to and status will be reported according to the assigned Severity Level. The planned response time for Service Incidents of each Severity Level is shown in Table 3-103. Note: time is measured during committed hours of service for non-severity level 1 and 2 issues.

Table 3-103: Planned Response Time

Assigned Severity Level	Service Incident Response Time (Initial Call Back Time)	Subsequent Updates
1	Within 15 minutes	Every hour
2	Within 2 hours	Every hour
3	Within 4 hours	As mutually agreed upon
4	Within 6 hours	As mutually agreed upon

It is understood that in some cases, these service incident response times may require modification based on specific needs. The Commonwealth Partners and the Commonwealth will work together to develop a mutually agreed to response time in such cases.

Operational Service Levels

The Commonwealth Partners will also provide the following service levels specific to supporting new Commonwealth Enterprise Applications:

Table 3-104: Service Level Targets

	Service Area	Service Type	Service Level Description	Service Level Target
1	Help Desk – Call Response	Call Response	Length of wait time in telephone queue during Primary Hours of Operation	TBD
2	Help Desk Availability	Availability	Primary Hours of Support	Mon – Fri 8:00 AM to 5:00 PM
3	Application Tuning	Support	Application and database tuning	TBD
4	Change Management for Enhancements to Enterprise Application base	Estimated level of effort	Respond to an approved change request providing a change proposal outlining a proposed solution	TBD
5	Batch job scheduling	Adjust schedules for batch processing	Implementation of changes to batch schedules	TBD
6	On-line Enterprise Application System Availability – Production Database	System Availability	Within the first xx days of the contract, within the next xx days of the contract, after xx days	TBD
7	Batch Window	Batch Completion	Successful completion of batch processes	TBD
8	Interface Support	Creation and delivery of files	Successful delivery of files in accordance with defined schedules and processes	TBD
9	Release schedule for changes	Migrations	Scheduled implementation of change requests and fixes	TBD
10	Security Maintenance Requests	Security Administration	Responding to requests for operator id additions/deletions and changes.	TBD
11	Security Password Reset	Security Administration	Resetting "Passwords" in accordance with established procedures	TBD
12	Software Upgrade Support	Migrations	Scheduled implementation of upgrades	TBD

The Commonwealth Partners and the Commonwealth will work collaboratively to determine the appropriate Service Level Targets.

Integration Points with Other Processes

(See related section 3.5.1 - Legacy Support)

In conclusion, upon completion of the implementation of each new Enterprise Application, the Commonwealth Partners Maintenance team will assume maintenance responsibility for that application. All of the newly implemented CMMI processes will be followed for the new Enterprise Application thus receiving all the benefits outlined in section 3.5.1.

The Commonwealth Partners' future vision for the four process areas – Administrative Management, Financial Management, Human Resources Management, and Supply Chain Management – shows vast opportunity for the Commonwealth to drive business process improvement, and set the momentum for continuous improvement, from this initiative in re-engineering and re-solutioning its business processes. We have described our approach to re-engineering each major business process. We have identified potential short-term and long-term improvements for each process in terms of efficiency, productivity, measurability, ownership, service delivery, and cost, and we have identified impacts on the organization. We have linked the strengths and weaknesses of the as-is environment to the opportunities of the end state vision. We have suggested some of the foremost technology solutions that lend themselves to meeting the requirements of the re-engineered processes.

In brief, we have described the to-be process environment in terms of an Enterprise Business Process Framework, which will provide enterprise-wide integration, standardization, and efficiency, while preserving operational flexibility at the agency level. Moreover, we have shown how an Enterprise Applications Managed Solutions Portfolio, as an array of large-scale ERP solutions combined with best-of-breed point solutions, will enable the Business Process Framework with state-of-the-art information technology. And we have proposed an Enterprise Center of Excellence (COE) to manage the Process Framework and the Managed Solutions Portfolio, keeping them aligned on the Commonwealth's evolving business needs and providing the mechanism for continuous improvement. We believe this initiative will permit no challenge to Virginia's claim to recognition as the *best managed state in the nation.*

Conclusion

The Commonwealth Partners' future vision for the four process areas – Administrative Management, Financial Management, Human Resources Management, and Supply Chain Management – shows vast opportunity for the Commonwealth to drive business process improvement, and set the momentum for continuous improvement, from this initiative in re-engineering and re-solutioning its business processes. We have described our approach to re-engineering each major business process. We have identified potential short-term and long-term improvements for each process in terms of efficiency, productivity, measurability, ownership, service delivery, and cost, and we have identified impacts on the organization. We have linked the strengths and weaknesses of the as-is environment to the opportunities of the end state vision.

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Figure 3-65: Enterprise Applications PPEA Detailed Proposal Solution Map